U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
PB-292 003

Office of Research and Development Program Guide Fiscal Year 1979

(U.S.) Environmental Protection Agency, Washington, DC

Jan 79

TECHNICAL REPORT DATA
(Please read Instructions on the reverse before completing)

1. REPORT NO. EPA-600/9-79-002	2.
3. RECIPIENT'S ACCESSION NO. PB292003	
4. TITLE AND SUBTITLE Office of Research and Development Program Guide - FY79	5. REPORT DATE January 1979
	6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S) JRB Associates McLean, VA 22101	8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS Technical Information Office (RD-674) Office of Research and Development Environmental Protection Agency Washington, D.C. 20460	10. PROGRAM ELEMENT NO. 1RW103
	11. CONTRACT/GRANT NO. 68-01-4839
12. SPONSORING AGENCY NAME AND ADDRESS Same as above	13. TYPE OF REPORT AND PERIOD COVERED Fiscal Year 1979
	14. SPONSORING AGENCY CODE EPA/600/00

15. SUPPLEMENTARY NOTES

16. ABSTRACT

The Program Guide provides the public with information on the Office of Research and Development's current extramural research program. It describes each of the major budget units, the funds associated with each, and the responsible laboratory (ies). In addition there are several indices which allow the user to refer to these units by media (air, water, etc.) function (health effects, control technology, etc.), or by a given laboratory's areas of responsibilities.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Guides (instructions), Organizatio charts, Grants, Financial manage- ment, Research management. Budget- ing Contract Administration, Planning	Research programs, Health and eclogical effects, Energy pro- gram, Industrial processes, Public sector, Monitoring and technical support	5A

18. DISTRIBUTION STATEMENT Release to Public	19. SECURITY CLASS (This Report) Unclassified	21. NO. OF PAGES 84
	20. SECURITY CLASS (This page) Unclassified	22. PRICE A05-A01

EPA Form 2220-1 (Rev. 4-77) PREVIOUS EDITION IS OBSOLETE

United States
Environmental Protection
Agency

Office of Research
Program Management
Washington DC 20460

EPA-600/9-79-002
January 1979

Research and Development

PB 292003

EPA

ORD Program Guide

FY 79

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U. S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

TO OBTAIN COPIES

Copies of this Program Guide are available from the EPA's ten regional offices, from ORD's fifteen associated laboratories throughout the country, and from the Office of Research and Development, Headquarters, Washington, D.C. Mail requests should be sent to:

Technical Information Office
Office of Research and Development (RD-674)
U.S. Environmental Protection Agency
Washington, D.C. 20460

You must complete and return the form located at the back of this publication to receive future editions of this Program Guide.

EPA-600/9-79-002
January 1979

PROGRAM GUIDE
FY 1979

October 1, 1978-September 30, 1979

Office of Research Program Management
Office of Research and Development
U.S. Environmental Protection Agency
Washington, D.C. 20460

TABLE OF CONTENTS

	Page
INTRODUCTION	1
USERS' GUIDE	3
DECISION UNIT DESCRIPTIONS	
Air	7
Drinking Water	12
Energy	14
Interdisciplinary	21
Pesticides	23
Radiation	25
Solid Waste	26
Toxic Substances	27
Water Quality	30
INDICES	
Media Index	41
Function Index	43
Office/Laboratory Index	46
APPENDIX A ORGANIZATIONAL DIRECTORY	
EPA Organizational Chart	55
ORD Organizational Chart	56
ORD Organizational Directory	57
EPA Officials and Regional Contacts	69
APPENDIX B GRANT/COOPERATIVE AGREEMENT AND CONTRACT GUIDELINES	77
MAILING LIST SELF-MAILER	83

OFFICE OF RESEARCH AND DEVELOPMENT
PROGRAM GUIDE

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) was established in December of 1970 and was charged with a single overall mission--the protection and enhancement of the environment. The Agency was created by Presidential Reorganization Order involving the transfer and integration of 15 separate units of previously existing agencies. A single organizational entity was thereby established for the control of environmental pollution, drinking water quality, environmental radiation and noise, solid wastes, pesticides, and other toxic substances. The purpose was to mount an integrated national attack on environmental pollution and to allow progression toward a full understanding of the total environment as a single system consisting of separate but interrelated parts.

The Office of Research and Development (ORD) functions as the principal scientific component of EPA. Its fundamental role is to produce scientific data and technical tools on which to base sound national policy in the development of effective pollution control strategies and the promulgation of adequate and viable environmental standards. ORD's research is supplemented by general scientific and technical research in other federal agencies, the academic community, and elsewhere. ORD also supports the Agency's involvement in many international organizations with mutual environmental research and development (R&D) concerns.

More general functions of ORD include: (1) maintenance of in-house expertise capable of quickly responding to emergencies and giving expert consultation and testimony when necessary; (2) sharing the results of environmental R&D with a wide range of individuals, groups, and agencies in ways that are meaningful and practical; and (3) giving expert scientific and technical assistance to other EPA offices to help them formulate environmental policy.

Specific authority for the conduct of EPA's research and development programs, including research support for environmental aspects of energy development, is included in the annual appropriation acts and the following legislation.

Clean Air Act, as amended (P.L. 95-95)
Federal Water Pollution Control Act, as amended (P.L. 92-500)
Safe Drinking Water Act (P.L. 93-523)
Federal Insecticide, Fungicide and Rodenticide Act, as amended (P.L. 92-516)
Public Health Service Act, as amended (P.L. 78-410)
Noise Control Act (P.L. 92-574)
Toxic Substances Control Act (P.L. 94-469)
National Environmental Policy Act (P.L. 91-190)
Marine Protection, Research and Sanctuaries Act (P.L. 92-532)
Resource Conservation and Recovery Act (P.L. 94-580)
Environmental Research, Development and Demonstration Authorization Act (P.L. 94-475)

The purpose of this Program Guide is to acquaint the research and development community with the organizational structure of the Office of Research and Development—and to make public the Office of Research and Development's extramural research program objectives for fiscal year 1979.

The Office of Research and Development (ORD) establishes its objectives and priorities in response to the overall mission and priorities of EPA and is highly concerned with solving specific priority problems rather than only advancing scientific knowledge. Although the scope of ORD projects may vary from fundamental research to the full-scale engineering demonstration of new pollution control processes, all projects are directed at meeting specified objectives as determined by the Agency's Zero Base Budgeting Process. While unsolicited proposals and grant applications may be submitted on any subject at any time (see Appendix B), all these proposals will be evaluated in the context of these preestablished objectives.

As a result of the Agency's commitment to the concept of Zero Based Budgeting (ZBB), a planning category called a "decision unit" has been implemented. The decision unit is the vehicle for all planning decisions within the Agency's ZBB process.

Each decision unit has a pre-defined goal which fits into the framework of the Agency's overall mission. The specific activities, objectives and priorities of a decision unit, which has been divided into discrete levels, are ranked on an agencywide basis with final approval made by the Administrator. Detailed planning on the individual projects required to fulfill the priorities established in the ZBB and documented in approved decision units is done by the appropriate ORD Laboratory.

The following pages describe the pre-defined goals of ORD's decision units which have funds planned for expenditure through the grant or contract process.

USERS' GUIDE

MEDIA CATEGORY → **WATER QUALITY**

DECISION UNIT TITLE → **MARINE ECOLOGICAL EFFECTS**

DECISION UNIT DESCRIPTION →

The objective of this research is to provide information on the ecological effects of specific pollutants and pollutant combinations on marine aquatic ecosystems. Significant activities include the development of a scientific base to support the development of marine and estuarine water quality standards and criteria; determination of the production, function and importance of estuarine wetlands; and determination of the ecological effects of waste treatment effluents and marine waste disposal practices.

ASSIGNMENT / CONTACT →

OFFICE/LABORATORY:	ERL/Corv	ERL/Nar	OHEE/HQ
CONTACT:	James McCarty	Dr. Eric Schneider	Dr. David Reimer
EXTRAMURAL FUNDS:	$814,000	$435,000	$10,000

MEDIA CATEGORY—The Decision Unit descriptions are grouped according to the media of concern. There are nine separate media categories: Air, Drinking Water, Energy, Interdisciplinary, Pesticides, Radiation, Solid Waste, Toxic Substances and Water Quality. The Media Index beginning on page 41 allows identification of the programs funded within each category.

ASSIGNMENT—Each Decision Unit description includes an abbreviated designation of the office or laboratory responsible for that unit. These abbreviations are easily identified in the Office/Laboratory Index found on page 46.

CONTACT—Each Decision Unit description also includes the name of an individual to contact regarding that program. The complete address and telephone number of that individual can be found in the Organizational Directory beginning on page 57.

MEDIA INDEX

Media	Page
WATER QUALITY	
Characterization and Measurement Methods Development	30
Chesapeake Bay	30
Freshwater Ecological Effects	31
Great Lakes/Research and Development	31
Health Effects	31
Industrial Processes	32
● Marine Ecological Effects	33
Monitoring Methods and Systems	34
Quality Assurance	34
Renewable Resources (Industrial)	35
Technical Support	35
Transport and Fate	36
Urban Systems, Toxics, and Residuals Management	36
Wastewater Systems Control Technology (Wastewater Management)	37

OFFICE/LABORATORY INDEX (Continued)

Code	Office/Laboratory Assignment	Page
ERL/Corv	**Environmental Research Laboratory/ Corvallis, OR**	
	Ecological Effects/Pesticides	23
	Ecological Effects/Toxic Substances	27
	Ecological Processes and Effects/Air	7
	Effects of Energy-Related Pollutants on Organisms and Ecosystems/Energy	14
	Fuel Processing, Preparation, and Advanced Combustion/Energy	17
	Freshwater Ecological Effects/Water Quality	31
	● Marine Ecological Effects/Water Quality	34

OFFICE OF RESEARCH AND DEVELOPMENT ORGANIZATIONAL DIRECTORY (CONTINUED)

OFFICE OF HEALTH AND ECOLOGICAL EFFECTS (CONTINUED)

	Headquarters* Mail Code	Telephone**
Environmental Research Laboratory		
● Director James McCarty (Acting)		CML (503) 757-4601
Deputy Director (Vacant)		FTS 420-4601
200 SW 35th Street		
Corvallis, OR 97330		

DECISION UNIT DESCRIPTIONS

Preceding page blank

AIR

CHARACTERIZATION AND MEASUREMENT METHODS DEVELOPMENT

The purpose of this decision unit is to develop sampling and analysis techniques for the identification, characterization, and measurement of pollutants in the ambient air, from mobile sources, and from stationary sources. Specific activities involving stationary sources include improving the sampling methods for particulate organic matter, arsenic and selenium, and developing and evaluating area-wide measurement methods for extended sources and fugitive emissions. Activities involving mobile sources include characterization of particulate emissions from diesel-powered vehicles and testing of NO_x demonstration autos for non-regulated emissions. Ambient air activities include characterizing air in selected cities for sulfates and total acid content, developing sampling methods for non-methane hydrocarbons, benzene, sulfur dioxide, and hydrogen sulfide, and continuing the development of particle sizing instruments for ambient aerosols.

OFFICE/LABORATORY:	MERLCinc	ESRL/RTP
CONTACT:	Francis Mayo	Dr. Paul Altshuller
EXTRAMURAL FUNDS:	$600,000	$4,222,000

ECOLOGICAL PROCESSES AND EFFECTS

The objective of this decision unit is to determine the acute and chronic effects of air pollutants, singly and in combination, upon individual flora, fauna, and soil ecosystem components and upon whole ecosystems. Specific activities include: determination of the impact of criteria and selected non-criteria pollutants on plant productivity and nutritional quality, assessment of the importance of vegetation and soils as sources or sinks for hydrocarbons or other non-criteria pollutants, comparison of the impact of pollutants on Eastern and Western forests, and assessment of bioenvironmental effects, fate, uptake and transport of trace elements, toxic heavy metals, halogen compounds, and other non-criteria pollutants.

OFFICE/LABORATORY:	ERL/Corv
CONTACT:	James C. McCarty
EXTRAMURAL FUNDS:	$504,000

Preceding page blank

AIR

HEALTH EFFECTS/CRITERIA POLLUTANTS

The objective of this research is to conduct studies on the air pollutants for which Ambient Air Quality Standards (AAQS) have been set. Results of these studies will be used to provide information for evaluating the adequacy of existing Ambient Air Quality Criteria (AAQC) and to provide a scientific basis for improvements to the AAQC. Activities under this decision unit include animal toxicologic, controlled human exposure (clinical), and epidemiological studies to evaluate criteria pollutants alone and in combinations. Research is specifically directed towards characterizing the possible health impact of simultaneous exposures to multiple pollutants, of exposure to criteria pollutants at ambient concentrations which approach the AAQS, and of exposure to air pollution indoors.

LABORATORY:	HERL/RTP
CONTACT:	Orin Stopinski
EXTRAMURAL FUNDS:	$352,000

HEALTH EFFECTS/NON-CRITERIA POLLUTANTS

The objective of this research is to conduct studies on air pollutants for which no Ambient Air Quality Standards (AAQS) have been set and on selected trace substances to determine whether these unregulated pollutants should be controlled in order to protect human health. Major activities are epidemiological, *in vivo* and *in vitro* animal toxicological, and human clinical studies on pollutants of greatest priority, including particulates such as sulfates, nitrates, and trace metals. Research is directed towards characterization of both acute and chronic effects of exposure to these particulate air pollutants. These studies are specifically designed to determine the relationship of particulate size to observed adverse health effects, and to evaluate the possible additive/synergistic effects following exposure to combinations of particulates and gases. The epidemiological studies will include two selected geographic areas where populations are exposed to different concentrations and species of sulfates.

OFFICE/LABORATORY:	HERL/RTP	OHEE/HQ	EMSL/RTP
CONTACT:	Orin Stopinski	Dr. Hugh McKinnon	Dr. Thomas Hauser
EXTRAMURAL FUNDS:	$3,241,000	$1,796,700	$640,000

AIR

HEALTH EFFECTS/TRANSPORTATION SOURCES

The major objective of this research is to analyze emissions from mobile sources to provide health effects information for decisions on certification of gasoline and diesel vehicles. Current emphasis is on diesel engines. Inhalational toxicity studies are being conducted for total diesel emissions, single identified diesel emission components, and emission products from new catalyst control systems. Epidemiological studies are being developed to determine morbidity and mortality effects of diesel emissions. *In vitro* screening tests are utilized to help characterize emissions and to identify hazardous biological activity. In conjunction with *in vivo* tests, components of diesel emissions are being analyzed and their health effects characterized.

OFFICE/LABORATORY:	ESRL/RTP	HERL/RTP	HERL/Cinc
CONTACT:	Dr. Paul Altshuller	James Smith	Dr. Norman Clarke
EXTRAMURAL FUNDS:	$625,000	$1,130,000	$470,000
	EMSL/RTP		
	Dr. Thomas Hauser		
	$568,000		

INDUSTRIAL PROCESSES

The overall purpose of this decision unit is to develop and demonstrate pollution control technologies capable of reducing or eliminating potentially hazardous and toxic pollutant air emissions from industrial point sources. Research efforts are directed toward assessment of the problem and development of pollution control technologies. The information gained will serve as a data base for use in setting new regulatory standards. Specific activities in the pesticide, petrochemical, and organic chemical manufacturing processes include the characterization and control of trace and volatile metal emissions from copper, lead, and zinc smelters; development of advanced collection technology for asbestos emissions; and the application of hydrometallurgical technology as an alternative to highly polluting pyrometallurgical processes in the nonferrous industry.

OFFICE/LABORATORY:	IERL/RTP	IERL/Cinc	OEMI/HQ
CONTACT:	Alfred Craig	Dr. Eugene Berkau	Carl Schafer
EXTRAMURAL FUNDS:	$1,806,000	$1,264,000	$239,600

AIR

MONITORING METHODS AND SYSTEMS

The objective of this program is to design, evaluate, improve, and adapt total air pollution measurement systems for routine uses. This includes citing criteria, sampling and calibrating procedures, manual and automated measurement methods, system operating guides, and data handling and reporting procedures. Activities respond to the Clean Air Act Amendments of 1977. Major program efforts include improving the national air quality monitoring networks, pilot testing a sampler network for monitoring airborne respirable particles, continuing the fuel and fuel additives registration program, improving visibility measurements for prevention of significant deterioration, improving monitoring techniques for criteria and noncriteria pollutants, preparing technical guidance documents for State and Local Air Monitoring Stations, and studying carbon monoxide intrusion into sustained-use vehicles.

OFFICE/LABORATORY:	EMSL/RTP	EMSL/LV	OMTS/HQ
CONTACT:	Dr. Thomas Hauser	George Morgan	Charles Brunot
EXTRAMURAL FUNDS:	$2,055,000	$65,000	$500,000

QUALITY ASSURANCE

The objective of this program is to develop and maintain an Agency-wide quality assurance program to improve and document the precision, accuracy, and intercomparability of all air pollutant measurements. Major activities include standardization and validation of total measurement systems for ambient air, emission sources, and radioactivity levels in air particulate matter, milk, and food; development and maintenance of standard reference materials for air pollutants and radionuclides in milk and food; on-site inspections and performance audits of State and Local Air Monitoring Stations and National Air Monitoring Stations; interlaboratory tests of systems' and operators' performances; and preparation and dissemination of data quality control manuals and guidelines.

OFFICE/LABORATORY:	EMSL/RTP
CONTACT:	Dr. Thomas Hauser
EXTRAMURAL FUNDS:	$2,229,000

AIR

TECHNICAL SUPPORT

This program supports the Office of Air Programs, regional offices, and other Agency components involved in air monitoring. The services provided include responding to scheduled, unscheduled, and emergency requirements for field monitoring, pollutant identification, and specialized technical analyses. Current activities include assisting in the selection of sampling, analytical, and statistical techniques for enforcement studies, providing in-situ and remote air quality monitoring systems, and monitoring ozone concentration in National Forests to gather data for model development and control strategy evaluation. This program area also prepares standard reference manuals and guidance documents, and provides consultation and training support in response to requests from regional offices. It is also responsible for storing and operating data in the National Fuels Surveillance Network and a global air monitoring network.

OFFICE/LABORATORY:	EMSL/LV	EMSL/RTP
CONTACT:	Dr. David McNelis	Dr. Thomas Hauser
EXTRAMURAL FUNDS:	$154,000	$1,117,500

TRANSPORT AND FATE

The main objective of this research is to provide information on the transport and fate of gaseous and particulate air pollutants. Activities include determination of mechanisms and rate constants of formations and removal processes of pollutants in the ambient air. This involves the development of air quality simulation models (AQSM) for predicting pollutant concentrations from sources for a variety of temporal and spatial scales. The User's Network for the Application of Models for Air Pollution (UNAMAP) will be updated with additional models and/or by modifying existing models. Research is also planned to determine the atmospheric effects of pollutants on visibility reduction. The activities under this unit provide meteorological support to other EPA programs.

OFFICE/LABORATORY:	ESRL/RTP
CONTACT:	Dr. Paul Altshuller
EXTRAMURAL FUNDS:	$8,715,600

DRINKING WATER

DRINKING WATER TREATMENT AND GROUND WATER PROTECTION

This decision unit involves three major areas of research: (1) treatment technology and systems management, (2) identification and measurement, and (3) ground water protection. The objective of the treatment area is to provide new or improved technology for the effective and economical control of drinking water contaminants. This is done via bench, pilot, and field-scale evaluations of technologies for their cost and effectiveness in limiting contaminants so that the municipal sector will be able to economically achieve compliance with present and future primary drinking water standards. The objective of the identification and measurement area is to develop techniques for sampling, identifying, and measuring the low levels of chemical contaminants found in finished drinking water. The objective of the ground water area is to provide the scientific basis for developing source control criteria to protect ground-water quality. This involves problem identification and methods-development for evaluating groundwater quality and the movement of pollutants in the underground environment.

OFFICE/LABORATORY:	MERL/Cinc	RSKERL/Ada	EMSL/Cinc
CONTACT:	Gordon Robeck	Jack Keeley	Dwight G. Ballinger
EXTRAMURAL FUNDS:	$4,788,600	$1,272,100	$200,000
	ERL/Athens		
	William T. Donaldson		
	$679,300		

DRINKING WATER

HEALTH EFFECTS

The objectives of this decision unit are to provide the health effects data for evaluation and possible revision of current standards, and for issuing new maximum contaminant levels (MCL) for drinking water contaminants. A number of toxicological and epidemiologic studies are being conducted, including studies to determine: (1) long-term health effects of exposure to organic mixtures in drinking water; (2) the possible relationship of water contaminants to cardiovascular diseases or cancer; (3) the health effects of arsenic, selenium, lead, asbestos and fluoride; and (4) the health effects of disinfection with chlorine, chlorine dioxide and ozone. Other activities include the determination of the occurrence and significance of viruses and *Giardia* in drinking water and investigation of the toxicity of compounds present in advanced waste treatment plant effluents.

OFFICE/LABORATORY:	HERL/Cinc
CONTACT:	Dr. Leland McCabe
EXTRAMURAL FUNDS:	$4,881,000

QUALITY ASSURANCE

The objective of this program is to develop and maintain a national quality assurance program to improve and document the precision, accuracy, and intercomparability of all drinking water measurements required by the Safe Drinking Water Act. Major activities include: standardization and validation of measurement systems; development and distribution of quality control samples and reference materials; on-site inspections and performance evaluations of laboratories; and development of procedures and acceptance criteria for certification of laboratories. Quality control samples will be provided for regulated water contaminants, such as microbes, trace metals, nitrate-fluoride, chlorinated hydrocarbon pesticides, chlorine residual, turbidity, herbicides, and radiation emitters.

OFFICE/LABORATORY:	EMSL/Cinc
CONTACT:	Dwight G. Ballinger
EXTRAMURAL FUNDS:	$453,000

ENERGY

EFFECTS OF ENERGY RELATED POLLUTANTS ON ORGANISMS AND ECOSYSTEMS

The Energy Health and Ecological Effects Program is an interagency program, composed of 11 Federal agencies, which is coordinated by ORD. The objective of this program is the development of ecological data on freshwater, marine, estuarine and terrestrial ecosystems which will be used in estimating the risks associated with accelerated development and utilization of domestic energy resources. Determination of the ecological effects of pollutants released from energy resource extraction, conversion, transmission and use is a major activity planned. In support of the Surface Mine Control and Reclamation Act of 1977, the program is funding reclamation/revegetation projects to determine rates of ecological recovery. Another planned activity is initiation of a cooperative study with a major oil company to determine the ecological effects of offshore oil and gas drilling. Research is also directed towards improved capability to perform ecological damage assessments of oil spills, considering both the short-term and long-term damage. A water use study to provide an early assessment of the potential ecological impacts of enormous new uses of water in energy development areas is also planned.

OFFICE/LABORATORY:	OEMI/HQ	HERL/Cinc	HERL/RTP
CONTACT:	Alfred A. Galli	Dr. John Garner	Dr. Gordon Hueter
EXTRAMURAL FUNDS:	$10,724,400	$50,000	$30,000
	ERL/Corv	ERL/Duluth	ERL/Narr
	James McCarty	Dr. Donald Mount	Dr. Eric Schneider
	$765,100	$1,745,000	$920,000
	ERL/GB		
	Dr. Thomas Duke		
	$540,000		

ENERGY

ENVIRONMENTAL ASSESSMENTS OF CONVENTIONAL AND ADVANCED ENERGY SYSTEMS

The primary objective of this program is to conduct comprehensive assessments of alternative energy systems to support the development of Federal environmental policies and standards. These technology assessments identify and quantify the environmental and economic tradeoffs between modified conventional energy systems, advanced energy supply concepts, energy conservation techniques, and pollution control technologies. A major effort is focused on the identification of unregulated and regulated residuals from conventional combustion sources. Another major effort is to develop systems to convert wastes to energy, control technologies for these systems, and controlled and uncontrolled emissions data. Other research activities include studies of solar and geothermal energy systems, alternative advanced coal fuel cycles, energy-associated water conservation, and waste heat utilization.

OFFICE/LABORATORY:	OEMI/HQ	IERL/RTP	IERL/Cinc
CONTACT:	David Berg	Dr. John Burchard	Dr. David Stephan
EXTRAMURAL FUNDS:	$5,267,000	$6,785,000	$2,718,900
	EMSL/LV	MERL/Cinc	
	George Morgan	Francis Mayo	
	$98,000	$265,000	

ENERGY

FLUE GAS PARTICULATE CONTROL

The purpose of this program is to identify and/or develop effective technology to control aerosol emissions from manmade sources. Major efforts in the program include research on conventional systems for abating aerosol emissions; development of new and improved methods of control; and bench-scale investigation of specific control methods for major problem sources. The effectiveness of electrostatic precipitators, scrubbers, and fabric filters to reduce fine particulate emissions resulting from burning of high and low sulfur coals, industrial processes, and mobile sources (diesels) will be assessed. Bench-scale tests of charged fogger devices for fugitive dusts and integrated systems for dry scrubbing and hot filtration are also planned activities.

OFFICE/LABORATORY:	IERL/RTP	OEMI/HQ
CONTACT:	James Abbott	George Rey
EXTRAMURAL FUNDS:	$7,030,000	$886,800

FLUE GAS SULFUR OXIDE CONTROL

The aim of this program is to develop and evaluate alternative flue gas desulfurization (FGD) technologies to reduce environmental and health hazards associated with sulfur dioxide emissions from industrial boilers, process furnaces, and power plants. Work in this area involves the development of a technological data base and an assessment of the impacts and removal efficiency of FGD technology to support the establishment of the Industrial Boiler Standard of Performance for sulfur dioxide. A technology transfer program to accelerate the implementation of FGD design modifications, which includes the development of symposia, decision models and data manuals, is a major effort of this program.

OFFICE/LABORATORY:	IERL/RTP	OEMI/HQ
CONTACT:	Everett L. Plyler	Robert Statnick
EXTRAMURAL FUNDS:	$2,420,000	$424,000

ENERGY

FUEL EXTRACTION

The objective of this decision unit is to evaluate processes for fuel extraction and handling and to develop appropriate control technologies to minimize the environmental impact from extraction processes. Work focuses on the assessment of oil, gas and solid fuel extraction, and includes the evaluation of surface mining reclamation techniques, oil spill clean up technology, oil/water separation, and regional water quality impacts associated with mining. Control technology manuals are prepared to aid in the coordination of industrial, regional, and national environmental programs. These efforts will provide data bases for future control technology development and support to effluent limitations and permitting program planning.

OFFICE/LABORATORY:	IERL/Cinc	OEMI/HQ
CONTACT:	Ronald Hill	Dr. Frank Princiotta
EXTRAMURAL FUNDS:	$2,100,600	$129,000

FUEL PROCESSING, PREPARATION, AND ADVANCED COMBUSTION

The objective of this program is to assess the environmental impact of advanced fossil fuel processing technologies to aid EPA in the selection of optimum policies to support environmentally acceptable energy consumption goals. The program provides information in process control technologies, bench-scale research, and environmental assessments which identify and quantify sources and environmental risks of process residuals and evaluate the effectiveness of existing pollution control techniques. Work is performed in coordination with the Department of Energy process development programs and includes environmental assessments of coal gasification and liquefaction processes, oil shale development, fluidized bed combustors, coal cleaning, and advanced oil processes.

OFFICE/LABORATORY:	IERL/Cinc	IERL/RTP	OEMI/HQ
CONTACT:	Alden Christianson	Robert Hangebrauck	Dr. Frank Princiotta
EXTRAMURAL FUNDS:	$1,654,300	$7,935,000	$705,800
	HERL/Cinc	ERL/Corv	ERL/Duluth
	Dr. John Garner	James McCarty	Dr. Donald Mount
	$50,000	$90,000	$100,000

ENERGY

HEALTH EFFECTS OF ENERGY-RELATED POLLUTANTS

The purpose of this program is to provide a coordinated effort in the energy-related health effects research being conducted by various Federal agencies with funds made available to the Interagency Energy/Environment Program. The objective of this research is to develop energy-related health data which will permit reliable estimates of risk to human health associated with increased development and utilization of domestic energy resources. Research undertaken includes animal toxicological and human clinical and epidemiological studies. Specific activities include screening of organic particulate and vapor phase emissions from industrial combustors; epidemiological studies of populations whose drinking water is known or suspected of being contaminated by conventional coal combustion operations; and toxicity studies determining the carcinogenicity of residuals from the oil shale fuel cycle.

OFFICE/LABORATORY:	HERL/RTP	HERL/Cinc	OEMI/HQ
CONTACT:	James R. Smith	Dr. Walter Grube	Gerald Rausa
EXTRAMURAL FUNDS:	$1,535,000	$1,573,500	$16,135,500

ENERGY

MEASUREMENT SYSTEMS AND INSTRUMENTATION DEVELOPMENT FOR ENERGY-RELATED POLLUTANTS

The purpose of this program is to focus and coordinate the research of the Federal Interagency Energy/Environment Measurement and Monitoring Program. Energy-related measurement and instrumentation development is currently being done by DOE, NASA, NBS, NIOSH, NOAA and EPA. The objective of this research is to provide timely and adequate ambient data for decision and policy making relative to energy resource development, facility siting, control technology, and regulatory requirements. Emphasis is placed on developing advanced air and water pollutant measurement methods, and techniques for measuring pollutants and effects from new energy technologies. Specific activities include development of indicator methods for monitoring the effects of air and water pollutants from coal-related sources and measurement methods for ambient radionuclides associated with combustion of various western coals. Multipollutant measurement methods for emissions in the vicinity of energy technologies will also be developed.

OFFICE/LABORATORY:	OEMI/HQ	EMSL/RTP	EMSL/Cinc
CONTACT:	Dr. James Stemmle	Dr. Thomas Hauser	Dwight Ballinger
EXTRAMURAL FUNDS:	$4,713,200	$20,000	$217,000
	ERL/Athens	ESRL/RTP	
	Dr. David Duttweiler	Dr. Paul Altshuller	
	$200,000	$700,000	

ENERGY

NITROGEN OXIDE CONTROL

The major objective of this program is to develop and evaluate advanced technologies for the control of nitrogen oxides (NO_x) emissions from fuel combustion sources. Engineering and analytical studies are conducted to determine the emission reduction potential of applying advanced combustion processes to stationary sources (commercial/industrial boilers, residential heating systems, stationary engines) and diesel engines. Specific projects have included bench-scale evaluations of flue gas treatment technologies and catalytic combustion concepts. Support is provided to the development of combustion modification concepts for the control of NO_x emissions from diesel-powered vehicles. An active field applications program has been established to accelerate the acceptance of improved combustion technologies by the major industrial sources.

OFFICE/LABORATORY:	IERL/RTP	OEMI/HQ
CONTACT:	Robert Hangebrauck	Robert Statnick
EXTRAMURAL FUNDS:	$11,315,000	$460,800

TRANSPORT AND FATE OF ENERGY-RELATED POLLUTANTS

The purpose of this program is to coordinate research on the transport and fate of energy-related pollutants. Various agencies, including NOAA, DOE, and TVA, are involved in activities under this program. Specific activities include determination of the origins, loads, transport pathways, transfer and transformation rates, and fate of energy-related pollutants released to the atmosphere and to aquatic environments primarily from coal and oil shale fuel cycles. Specifically, atmospheric oxides of sulfur and nitrogen will be studied. Other planned activities include establishment of the relationship between overburden mineralogy and potential groundwater changes from in-situ coal gasification, and development of simulation models of thermal disperseion and fluid mechanics in fresh water.

OFFICE/LABORATORY:	OEMI/HQ	HERL/RTP	ERL/Athens	RSKERL/Ada
CONTACT:	Dr. James Stemmle	Dr. Gordon Hueter	Dr. David Duttweiler	William Galegar
EXTRAMURAL FUNDS:	$3,802,000	$4,004,000	$300,000	$325,000

INTERDISCIPLINARY

ANTICIPATORY RESEARCH AND DEVELOPMENT

The objectives of this program are to identify and characterize emerging problems before serious crises occur, develop approaches to long term problems, and assure that basic studies needed to support applied research activities are conducted. The program is divided into three components with the following purposes: (1) Innovative Research—to provide opportunities for individual scientists with unique ideas; (2) Center Support Research—to provide long term support for basic studies in key research areas; and (3) Directed Programs—to conduct systematic studies of emerging interdisciplinary problems. Perceived problems in industrial, agricultural and urban areas are analyzed. Emphasis is presently on problems of acid rain, environmental cancer, and the development of methodologies for estimating environmental benefits.

OFFICE/LABORATORY:	OPSA/HQ
CONTACT:	Dennis Tirpak
EXTRAMURAL FUNDS:	$5,142,000

CARCINOGEN ASSESSMENT GROUP (CAG)/ENVIRONMENTAL CRITERIA AND ASSESSMENT OFFICE (ECAO)

The objective of the scientific assessment program is to provide health and/or risk assessments and scientific documentation in direct support of the regulatory program offices. Evaluations are conducted by two groups: The Carcinogen Assessment Group (CAG) and the Environmental Criteria and Assessment Office (ECAO). The CAG provides policy development and guidance to the Agency's assessment of data related to health risks associated with suspect carcinogens. The ECAO conducts assessments for air health criteria, hazardous solid wastes and water criteria, and prepares criteria documents for the regulatory offices. Air Criteria Documents have included analyses of NO_x, CO, SO_x, and HC. The ECAO water quality program centers on the development of health criteria for 65 Consent Decree pollutants. Review of Environmental Effects of Pollutants (REEP) documents will be prepared for toxaphene, PCB's, chlorophenols, and endrin. The ECAO will interface with the CAG on all matters pertaining to cancer risk assessments of environmental pollutants.

OFFICE/LABORATORY:	ECAO/Cinc	ECAO/RTP	OHEA/HQ
CONTACT:	Dr. Jerry Stara	Michael Barry	Dr. Elizabeth Anderson
EXTRAMURAL FUNDS:	$2,785,300	613,200	$583,800

INTERDISCIPLINARY

TECHNICAL INFORMATION

The principal objective of the technical information program is to disseminate scientific and technical information on environmental topics to specific user groups both within and external to the Agency. The technical information unit has three major areas: Technology Transfer, Technical Information Reporting, and Management Information Reporting. Technology Transfer activities provide usable, proven technology to specific user groups. This is accomplished through a variety of tasks including the printing and distributing of process design manuals and conducting seminars and workshops. Technical Information Reporting activities document the results and findings of ORD research for the public record. The Management Information Reporting activities are provided to support the information needs of Agency officials. These activities include the maintenance and operation of ORD information systems for tracking projects, extramural commitments, and budgets.

OFFICE/LABORATORY:	ORPM/HQ	ERIC/Cinc
CONTACT:	Dr. Randall Shobe	Robert Crowe
EXTRAMURAL FUNDS:	$712,000	$800,000

PESTICIDES

ECOLOGICAL EFFECTS

The objective of this decision unit is to develop information on the fate and effects of pesticides for use in assessing their ecological effects in aquatic and terrestrial habitats. Data from this work will be used in the establishment of water quality criteria and pesticides regulation guidelines. Hazardous assessment activities include: laboratory studies of Rebuttable Presumption Against Registration (RPAR) compounds and development of a hazard assessment predictive model. Methodology development is directed towards acute and chronic bioassay testing procedures, bioconcentration and bioaccumulation techniques, behavioral bioassays, community effects procedures, microbial effects, and entire-life cycle tests.

OFFICE/LABORATORY:	ERL/Corv	ERL/Duluth
CONTACT:	James C. McCarty	Dr. Donald Mount
EXTRAMURAL FUNDS:	$237,100	$69,500

HEALTH EFFECTS

The objective of this decision unit is to provide the health effects research information on pesticides necessary for enforcement and regulatory action. Activities include a variety of laboratory and field studies to determine the toxicological effects of pesticides. Specific areas of investigation involve: determining the implications of "new generation" pesticides, evaluating for humans the potential carcinogenicity, mutagenicity, teratogenicity, and other toxicological effects of pesticides, evaluating human exposure during application procedures, and developing predictive models for extrapolating human effects from animal studies. This research will be used to develop scientific criteria for defining hazards associated with the use of each pesticide and finding suitable substitutes for those compounds found to be excessively hazardous. Research is also directed towards the development and validation of analytical methods for determining the presence of pesticides and their metabolites in environmental and biological samples.

OFFICE/LABORATORY:	HERL/RTP	OHEE/HQ
CONTACT:	Dr. William F. Durham	Dr. Kenneth Hood
EXTRAMURAL FUNDS:	$1,483,000	$91,700

PESTICIDES

INTEGRATED PEST MANAGEMENT (INDUSTRIAL)

The aim of this program is to develop optimum combinations of nonchemical and chemical pest controls to reduce the total dependence upon pesticide chemicals as a means of pest control. The management of pest populations is a dynamic process requiring continued adaptation in technology as pests adapt and change. Pest management studies are directed toward major crop ecosystems including corn, cotton, soybean, alfalfa, and apple. Urban pest management studies are also being conducted. These studies involve termite, aphid, turf pest, and mosquito control. Other areas of research include insect mating disruption and pathogenic control of weeds.

OFFICE/LABORATORY: OHEE/HQ
CONTACT: Dr. Kenneth Hood
EXTRAMURAL FUNDS: $4,100,000

QUALITY ASSURANCE

The objective of this program is to develop and maintain an Agencywide quality assurance program to document and improve the precision, accuracy, and intercompatibility of pesticide measurements in biological materials and soils. Specific activities included in this program are standardization and performance evaluation of analytical procedures and development of standard reference materials for pesticides in adipose tissue, human milk, urine, and other biological tissues and fluids, and in soil; maintenance of a repository of quality control reference pesticides, bulk materials, and high purity chemicals and distribution of repository samples upon request; evaluation of pesticides laboratories and analytical proficiency of pesticides analysts; revision and updating of analytical methods and pesticides quality assurance manuals; and maintenance of electronic repair and calibration facilities for the Office of Pesticides Programs epidemiological studies laboratories.

OFFICE/LABORATORY: HERL/RTP
CONTACT: Dr. Edward Oswald
EXTRAMURAL FUNDS: $10,000

RADIATION

HEALTH AND ECOLOGICAL EFFECTS

The objective of this program is to provide health effects information on the hazards of non-ionizing radiation. This information is necessary for the establishment of protective guidelines for environmental levels of such radiation. Specific activities include: determination of the health effects of exposure to environmentally occurring electromagnetic radiation, including neurophysiologic, behavioral, teratogenic, immunologic, and carcinogenic effects; definition of absorption frequencies of electromagnetic radiation in biological systems; and identification of mechanisms of interaction, including frequency dependence and power densities.

OFFICE/LABORATORY:	HERL/RTP
CONTACT:	Dr. Daniel Cahil
EXTRAMURAL FUNDS:	$794,000

SOLID WASTE

CONTROL TECHNOLOGY

Under this decision unit research and development efforts are directed toward the development of technology necessary to achieve enironmentally acceptable and cost effective solid waste management practices to control the release of solid and hazardous wastes into the environment. The objective is to evaluate and develop improved management practices and collection, storage, transportation, and disposal techniques to augment the Agency's efforts in developing guidelines and regulations in support of the Resource Conservation and Recovery Act. Research focuses on problems in hazardous waste processing treatment and disposal, resource conservation and recovery, industrial pollution, landfilling, and design and verification of remedial actions. Specific activities which support the objectives for the industrial sector include research in the organic chemical and nonferrous metal industries to evaluate and develop separation and recovery techniques and treatment of sludge from industrial laundries. Field verification conducted to determine the impact of landfilling include soil modification techniques, leachate treatment schemes, and pollutant migration models. In the area of hazardous wastes, field studies are ongoing to examine thermal processing, biodegradation processes, and disposal pits for pesticides.

OFFICE/LABORATORY:	IERL/Cinc	MERL/Cinc
CONTACT:	Dr. David Stephan	Francis Mayo
EXTRAMURAL FUNDS:	$1,756,300	$5,141,600

TOXIC SUBSTANCES

CHARACTERIZATION AND MEASUREMENT METHODS DEVELOPMENT

The objective of this program is to develop procedures for systematic characterization and quantification of toxic chemicals in the environment. Expertise in this area is essential for measuring and monitoring exposure levels of toxics. The various activities include the development of more reliable analytical and instrumental methods for measuring toxics in air, water, and sediment; improved collection, sampling and separation techniques; and analytic techniques to be used in monitoring exposure levels to toxic chemicals in the atmosphere. The identification and quantification of toxics at trace levels in high volume production toxic substances is another research area of this program which will enable the Agency to minimize the risks of hazardous exposure to humans and to the environment.

OFFICE/LABORATORY:	ESRL/RTP	ERL/Athens
CONTACT:	Charles Hosler	William T. Donaldson
EXTRAMURAL FUNDS:	$333,000	$69,500

ECOLOGICAL EFFECTS

The objective of this decision unit is to develop and validate screening techniques for assessing the ecological effects of toxic substances. Protocols will be developed and tested to evaluate toxicity and bioconcentration of chemicals in freshwater, marine, and terrestrial environments. Emphasis is placed on improving the quality and increasing the reliability of current testing standards. Specific ongoing projects include the determination of static and flow-through acute and chronic effects on fish and invertebrates, ethylene stress for plants, epidemiological studies to correlate the incidence of skin cancer to actual UV-B exposure levels, and a comprehensive study of health, ecological, climatic, and social/economic effects of ozone depletion.

OFFICE/LABORATORY:	ERL/Corv	ERL/Duluth	ERL/Narr
CONTACT:	James C. McCarty	Dr. Donald Mount	Dr. Eric Schneider
EXTRAMURAL FUNDS:	$425,000	$72,000	$125,000
	ERL/GB	OHEE/HQ	
	Dr. Thomas W. Duke	Dr. David Flemer	
	$100,000	$429,000	

TOXIC SUBSTANCES

HEALTH EFFECTS

The major objective of this decision unit is to develop improved methodologies and techniques to determine the toxic effects of chemical substances in support of the development and implementation of Federal environmental regulations. Emphasis is placed on research to promote and validate improved screening techniques for determining the carcinogenic, mutagenic, teratogenic, neurotoxic and other toxicologic effects of chemical substances. Long-term low-dose research is being performed to correlate environmental and ambient levels of pollutants and measured routes of exposure with tumor induction and other health effects. Research is also carried out to ascertain effects of human activities on stratospheric ozone, the impacts of changes in stratospheric ozone content on health and welfare, and methods and costs of controlling such changes. Epidemiological studies are conducted to evaluate and confirm the significance of toxic effects in animals as related to health effects in human populations.

OFFICE/LABORATORY:	HERL/Cinc	HERL/RTP	OHEE/HQ
CONTACT:	Dr. Richard J. Bull	Dr. Ronald L. Baron	Dr. Alphonse F. Forziati
EXTRAMURAL FUNDS:	$484,300	$5,216,000	$677,000

INDUSTRIAL PROCESSES

This program was established to provide technical assistance in the assessment of industrial manufacture and discharge of toxic substances. Its objective is pollutant identification and quantification for specified industrial point sources, and evaluation and development of quality controls and alternative chemical processes which are environmentally acceptable. Research focuses on minimizing public exposure to priority pollutants such as organonitrogens and halogenated hydrocarbons which are present in manufacturing processes, waste streams, and commercially available products. Studies are conducted to determine the occurrence, use, and possible substitutions for chemicals which have been identified by TOSCA as high priority pollutants. Other support areas include the preparation of technical references and reports, participation in work groups, and the development of expert testimony as required by the program office.

OFFICE LABORATORY:	OEMI/HQ
CONTACT:	Paul Des Rosiers
EXTRAMURAL FUNDS:	$186,000

TOXIC SUBSTANCES

TECHNICAL SUPPORT

The purpose of this program is to respond to scheduled, unscheduled, and emergency requirements for special field and analytical studies in support of the Office of Toxic Substances and the regional offices. The nature of this support will be the performance and analysis of complex physical or chemical monitoring and testing, and adapting and modifying basic state-of-the-art techniques to gain empirical evidence of the environmental levels of specified pollutants. Specific projects include sampling of fugitive emissions from industries to determine the presence of low levels of toxic chemicals, metabolites of toxic chemicals, or breakdown products of toxic chemical manufacture, use, disposal or transport, and environmental assessments of the impact of classes of toxic compounds across the media. This research program provides baseline data which is critical to the effective control of toxics in the environment.

OFFICE/LABORATORY:	EMSL/LV	EMSL/RTP	OMTS/HQ
CONTACT:	John Santolucito	Franz Burmann	Eugene James
EXTRAMURAL FUNDS:	$170,200	$200,000	$68,200

TRANSPORT AND FATE

The objective of this decision unit is to develop and analyze test screening and test protocols for assessment of the transport, transformation, and persistence of toxic substances released into the environment. The major thrust of the program is the development of multimedia exposure assessment models which serve as a base for analytical studies and better predictive capabilities as applied to the actual environment. Current research areas include testing protocols for photolysis of toxics in air, leaching studies for toxic chemicals in soils, water, and sediments, model development for toxic chemicals in the food chain, and the application of exposure assessment models to human populations.

OFFICE/LABORATORY:	ERL/Athens	ESRL/RTP	RSKERL/Ada
CONTACT:	Dr. Walter M. Sanders	Charles Hosler	Dr. Arthur Hornsby
EXTRAMURAL FUNDS:	$985,400	$350,000	$65,000

WATER QUALITY

CHARACTERIZATION AND MEASUREMENT METHODS DEVELOPMENT

The objective of this decision unit is to establish procedures for identification and quantification of all relevant chemical constituents in water and wastes. The development of measurement and sampling methods is necessary for the formulation of effluent guidelines, assessment of control technologies, and in monitoring efforts. Specific activities are the development of methods for measurement of volatile and non-volatile organic chemicals, methods for simultaneous multielement analysis of water and wastewaters, establishment of an analytical reference method for asbestos, and development of "marker compounds" for the quantitative analysis of organic pollutants in water. Other research efforts include developing and evaluating analytical methods for identification and quantification of free ionic species in aqueous media and of toxic organic and inorganic chemicals bound to sludges and sediments.

OFFICE/LABORATORY: ERL/Athens
CONTACT: Dr. Charles Anderson
EXTRAMURAL FUNDS: $50,000

CHESAPEAKE BAY

The Chesapeake Bay decision unit covers a program developed in response to a Congressional Mandate which required the EPA to conduct an indepth study of the Bay, define the factors adversely impacting the environment, develop research and abatement programs to address adverse factors and define management strategies to ameliorate degradation. Integrated studies have been initiated to provide a predictive capacity to assess the consequences of pollutant loadings on the Chesapeake Bay in terms of effects on the ecosystem, on organisms, on human health, and on the economic impact of the uses made of the system. This predictive capacity is designed to aid management decisions at all government levels, and particularly those decisions concerned with toxic substances management, nutrient management to halt eutrophication processes, and management of the drainage basin ecosystem to control major ecological changes, such as the disappearance of submerged aquatic vegetation.

OFFICE/LABORATORY: OHEE/HQ
CONTACT: Dr. David Flemer
EXTRAMURAL FUNDS: $2,400,000

WATER QUALITY

FRESHWATER ECOLOGICAL EFFECTS

The objective of this research is to provide information on the ecological effects of specific pollutants and practices on freshwater systems. One research effort is to identify and define the role of sediments in toxicant transport, transformation, and distribution. Research is also directed towards investigating the effects of on-land disposal of municipal and industrial waste effluents. Other activities include evaluation and coordination of clean lakes evaluation programs; continuation of the study of the role and function of wetlands, particularly as they impact non-source point runoff; and refinement of test methods for the evaluation of NPS control practices and impact measurement of selected NPS pollutants. Another research effort is to study the ecological impact of industrial wastes, oil, sedimentation, and instream perturbations on cold climate aquatic systems.

OFFICE/LABORATORY:	ERL/Corv	ERL/Duluth	ERL/GB
CONTACT:	James C. McCarty	Dr. Donald Mount	Dr. Thomas W. Duke
EXTRAMURAL FUNDS:	$901,000	$130,000	$595,000
	OHEE/HQ		
	Dr. David Flemer		
	$60,000		

GREAT LAKES/RESEARCH AND DEVELOPMENT

The objective of this decision unit is to characterize the pollution problems of the Great Lakes, to determine the dynamic processes affecting pollution of large lakes, and to develop predictive models for describing the fate and effects of pollutants in the Great Lakes. Significant activities include: determination of mechanisms of toxic pollutant accumulation and elimination in the Great Lakes; development and refinement of predictive models for assessing nutrient/toxicant problems in the Great Lakes, and determination of biogeographical distribution, function, and fate of organisms in relation to toxic substances, nutrients, entrainment in cooling systems, shoreline construction, and hydrological modification.

OFFICE/LABORATORY:	ERL/Duluth
CONTACT:	Dr. Donald Mount
EXTRAMURAL FUNDS:	$2,654,000

WATER QUALITY

HEALTH EFFECTS

This program can be divided into three general areas of research: wastewater and sludge treatment and utilization, recreational water quality criteria, and wastewater reuse (potable). The objective of the wastewater and sludge research is to determine the health implications of existing and innovative technology for the treatment, disposal, and agricultural utilization of wastewater and sludge. Specific activities include epidemiologic studies to determine the health effects of aerosols from conventional wastewater treatment plants, toxicologic and epidemiologic studies to evaluate potential health effects of exposure to pathogens and metals in wastewater and sludge applied to agricultural land, and epidemiological studies to evaluate populations exposed to pathogens, persistent organics, and trace metals from spraying wastewater and sludge on land. The objective of the recreational waters research is to provide health effects data needed to establish water quality criteria. Significant activities include epidemiological/microbiological studies at marine and freshwater beaches to associate pollution-related health effects to microbiological water quality indicators. The third objective of this program is to develop the health effects data base necessary to set criteria for the safe reuse of wastewaters for potable purposes. This research is coordinated with the potable reuse research in the Drinking Water Health Effects decision unit. Related activities include several toxicological and epidemiological studies of the impact of wastewater reuse.

OFFICE/LABORATORY:	HERL/Cinc	ERL/Duluth	OHEE/HQ
CONTACT:	Herb Pahren	Dr. Donald Mount	Dr. George Armstrong
EXTRAMURAL FUNDS:	$5,081,000	$100,000	$45,000

WATER QUALITY

INDUSTRIAL PROCESSES

The objective of this decision unit is to develop control technologies capable of reducing potentially hazardous and toxic pollutant effluents from industrial point sources to acceptable levels. The research consists of two main pursuits: (1) assessment of the magnitude of the problem; the economic, environmental, energy use efficiency of existing technologies; and (2) research, development and demonstration of promising technologies. Outputs provide technical and cost data bases for support of regulatory standards and for direct application by industry in solving pollution problems. Industrial pollution problems considered include those from chemical processing (fertilizers and pesticides); agrichemicals, textiles, pulp, paper, food; metal fabrication and finishing; hazardous material incidents; metal and mineral production; and petroleum refining and storage. Special attention will be given to the treatment of combined industrial-municipal wastewaters, including the development and demonstration of pretreatment technologies and strategies. Additional emphasis will be directed to technologies which enable the reuse and recycle of water and by-product recovery.

OFFICE/LABORATORY:	IERL/Cinc	IERL/RTP	OEMI/HQ
CONTACT:	Dr. Eugene Berkau	Alfred Craig	George Keeler
EXTRAMURAL FUNDS:	$3,639,700	$1,850,000	$113,700
	RSKERL/Ada		
	William Galegar		
	$379,500		

WATER QUALITY

MARINE ECOLOGICAL EFFECTS

The objective of this research is to provide information on the ecological effects of specific pollutants and pollutant combinations on marine aquatic ecosystems. Significant activities include the development of a scientific base to support the development of marine and estuarine water quality standards and criteria; determination of the production, function and importance of estuarine wetlands; and determination of the ecological effects of waste treatment effluents and marine waste disposal practices.

OFFICE/LABORATORY:	ERL/Corv	ERL/Narr	OHEE/HQ
CONTACT:	James McCarty	Dr. Eric Schneider	Dr. David Flemer
EXTRAMURAL FUNDS:	$614,000	$335,000	$10,000

MONITORING METHODS AND SYSTEMS

The objective of this program is to develop, modify, and evaluate analytical methods and monitoring systems for field application. These techniques and systems are intended for use in monitoring ground and surface waters, sludges, soils, and effluents from industrial and non-point sources. Specific activities include development of reference methods for toxic and hazardous substances in wastewaters, ambient waters, sludges, and ocean-disposed wastes; development of analytical methods for recovery and detection of pathogenic and other microbial forms from municipal and industrial effluents; and development of unattended waterborne sensors for deployment in wide-area monitoring systems. The work is undertaken in support of the National Pollutant Discharge Elimination System, Safe Drinking Water Act, and other legislation requiring monitoring programs.

OFFICE/LABORATORY:	EMSL/Cinc	OMTS/HQ
CONTACT:	Dwight Ballinger	Charles Brunot
EXTRAMURAL FUNDS:	$360,000	$500,000

WATER QUALITY

QUALITY ASSURANCE

The objective of this program is to develop and maintain an Agency-wide quality assurance program to improve and document the precision, accuracy, and intercomparability of all water quality and related measurements. Major activities include standardization and validation of analytical procedures and of total measurement systems; development and distribution of quality control samples and reference materials; on-site inspections of laboratories; performance evaluations of measurement systems and operators; systems and data audits. The quality of monitoring data from a great variety of measurements must be assured. Quality assurance support is provided for routine environmental monitoring of ground and surface waters, sludges, soils, and effluents from municipal, industrial, and non-point sources. Outputs directly support Program Office, Regional, and State regulatory monitoring programs required by the Clean Water Act and related legislation.

OFFICE/LABORATORY:	EMSL/Cinc
CONTACT:	Dwight Ballinger
EXTRAMURAL FUNDS:	$3,643,500

RENEWABLE RESOURCES (INDUSTRIAL)

The objective of this decision unit is to develop a basis for selecting and justifying local management techniques for controlling non-point source pollutants related to agricultural and forestry production, including crop production on both irrigated and non-irrigated lands and animal production. A major activity is to provide the basic technology needed by State and local water quality decision makers to control pollution from agricultural and forestry production. This involves development, evaluation, and model refinement of best management practices (BMP), including cost-effectiveness studies for both irrigated and non-irrigated crop production sites. Planned research also includes studies to determine the impact of toxic materials from agricultural activities on surface and groundwaters.

OFFICE/LABORATORY:	ERL/Athens	RSKERL/Ada
CONTACT:	Dr. George Bailey	Dr. James Law
EXTRAMURAL FUNDS:	$894,500	$924,400

WATER QUALITY

TECHNICAL SUPPORT

This program supports the Office of Water Programs, regional offices, the permits program, and other Agency components involved in water monitoring. The services provided include responding to scheduled and emergency requirements for field monitoring, pollutant identification, and data analysis to produce empirical information to support and enforce regulations. Specific activities are: consultations on analytical test procedures for municipal and industrial wastes; field studies such as the Lake Tahoe Study, Poplar River Survey, and Region IV Strip Mine Survey; and support to thermal outfall surveys and emergency oil and hazardous material spill surveys.

OFFICE/LABORATORY: EMSL/LV
PROJECT CONTACT: Dr. David McNelis
EXTRAMURAL FUNDS: $50,000

TRANSPORT AND FATE

The overall objective of research covered by this decision unit is to provide methods and associated data bases for: (1) predicting water quality impacts resulting from the discharge of point and non-point source pollution into fresh surface waters; (2) translating water quality standards into maximum allowable source loadings to a given water body segment; and (3) systematically evaluating the costs and benefits of alternative point and non-point source management strategies with consideration of water quality, energy, and socioeconomic impacts. Major activities are the expansion of water quality predictive models to address impacts of sediments and toxic chemicals, and development of new lake, reservoir, and estuary models.

OFFICE/LABORATORY: ERL/Athens
CONTACT: Dr. Walter M. Sanders
EXTRAMURAL FUNDS: $905,500

WATER QUALITY

URBAN SYSTEMS, TOXICS AND RESIDUALS MANAGEMENT

The objective of this decision unit is to develop and assess pollution control strategies and technologies to support the Agency's goals for controlling toxics and residuals in an urban environment, in accordance with the requirements of the Clean Water Act, the Resource Conservation and Recovery Act, and the Toxic Substances Control Act. Research is directed towards developing strategies to prevent the dispersion of toxic substances, management schemes for the use and disposal of municipal sludge, and analysis of treatment system operations. Specific activities include an analysis of the fate and effects of toxics in municipal waste treatment facilities, characterization of sludge combustion emissions, and the demonstration of sludge management and beneficial utilization practices. The results of the various analytical and field research activities will support the development of a data base for system analysis of factors effecting the reliability, costs, efficiency, and environmental quality of innovative treatment technologies and management schemes.

OFFICE/LABORATORY:	MERL/Cinc	RSKERL/Ada
CONTACT:	John Convery	William Galegar
EXTRAMURAL FUNDS:	$11,559,000	$608,500

WASTEWATER SYSTEMS CONTROL TECHNOLOGY (WASTEWATER MANAGEMENT)

The objective of this decision unit is to provide the research support required by the Agency's strategy for achieving the water quality goals of the Water Pollution Control Act (PL 92-500). Under this decision unit, research and development efforts are directed toward the development of technologies necessary to achieve environmentally acceptable and cost effective solutions for municipalities through the following activities: (1) the development and demonstration of new and innovative processes to upgrade the efficiency of existing plants and to provide proven alternatives for specific water quality requirements for new plants; (2) the development of methods for collection, storage and treatment of on-site and small wastewater flows; (3) the development and evaluation of soil as a media treatment; (4) the development of an urban runoff control program to provide usable data and design information in planning, construction, enforcement and permit conditions for wet weather flows; and (5) the development and demonstration of a water conservation and reuse program through the use of water-saving devices, renovation of wastewater for successive uses, and other socio-economic incentives.

OFFICE/LABORATORY:	MERL/Cinc	OALWU/HQ
CONTACT:	John Convery	Dr. Courtney Riordan
EXTRAMURAL FUNDS:	$4,350,000	$100,000

INDICES

Preceding page blank

MEDIA INDEX

Media	Page
AIR	
Characterization and Measurement Methods Development	7
Ecological Processes and Effects	7
Health Effects/Criteria Pollutants	8
Health Effects/Non-Criteria Pollutants	8
Health Effects/Transportation Sources	9
Industrial Processes	9
Monitoring Methods and Systems	10
Quality Assurance	10
Technical Support	11
Transport and Fate	11
DRINKING WATER	
Drinking Water Treatment and Groundwater Protection	12
Health Effects	13
Quality Assurance	13
ENERGY	
Effects of Energy-Related Pollutants on Organisms and Ecosystems	14
Environmental Assessments of Conventional and Advanced Energy Systems	15
Flue Gas Particulate Control	16
Flue Gas Sulfur Oxide Control	16
Fuel Extraction	17
Fuel Processing, Preparation, and Advanced Combustion	17
Health Effects of Energy-Related Pollutants	18
Measurement Systems and Instrumentation Development for Energy-Related Pollutants	19
Nitrogen Oxide Control	20
Transport and Fate of Energy-Related Pollutants	20
INTERDISCIPLINARY	
Anticipatory Research and Development	21
Carcinogen Assessment Group/Environmental Criteria and Assessment Office	21
Technical Information	22

Preceding page blank

MEDIA INDEX (Continued)

Media	Page
PESTICIDES	
Ecological Effects	23
Health Effects	23
Integrated Pest Management (Industrial)	24
Quality Assurance	24
RADIATION	
Health and Ecological Effects	25
SOLID WASTE	
Control Technology	26
TOXIC SUBSTANCES	
Characterization and Measurement Methods Development	27
Ecological Effects	27
Health Effects	28
Industrial Processes	28
Technical Support	29
Transport and Fate	29
WATER QUALITY	
Characterization and Measurement Methods Development	30
Chesapeake Bay	30
Freshwater Ecological Effects	31
Great Lakes/Research and Development	31
Health Effects	32
Industrial Processes	33
Marine Ecological Effects	34
Monitoring Methods and Systems	34
Quality Assurance	35
Renewable Resources (Industrial)	35
Technical Support	36
Transport and Fate	36
Urban Systems, Toxics, and Residuals Management	37
Wastewater Systems Control Technology (Wastewater Management)	37

FUNCTION INDEX

Function	Page
CONTROL TECHNOLOGY	
Control Technology/Solid Waste	26
Drinking Water Treatment and Groundwater Protection/Drinking Water	12
Flue Gas Particulate Control/Energy	16
Flue Gas Sulfur Oxide Control/Energy	16
Fuel Extraction/Energy	17
Fuel Processing, Preparation, and Advanced Combustion/Energy	17
Nitrogen Oxide Control/Energy	20
Wastewater Systems Control Technology/Water Quality	37
ECOLOGICAL EFFECTS	
Chesapeake Bay/Water Quality	30
Ecological Effects/Pesticides	23
Ecological Effects/Toxic Substances	27
Ecological Processes and Effects/Air	7
Effects of Energy-Related Pollutants on Organisms and Ecosystems/Energy	14
Freshwater Ecological Effects/Water Quality	31
Great Lakes/Research and Development/Water Quality	31
Health and Ecological Effects/Radiation	25
Marine Ecological Effects/Water Quality	34
ENVIRONMENTAL ASSESSMENT AND MANAGEMENT	
Anticipatory Research and Development/Interdisciplinary	
Carcinogen Assessment Group/Environmental Criteria and Assessment Office/Interdisciplinary	21
Environmental Assessments of Conventional and Advanced Energy Systems/Energy	15
Integrated Pest Management (Industrial)/Pesticides	24
Renewable Resources (Industrial)/Water Quality	35

FUNCTION INDEX (Continued)

Function	Page
HEALTH EFFECTS	
Health and Ecological Effects/Radiation	25
Health Effects/Criteria Pollutants/Air	8
Health Effects/Drinking Water	13
Health Effects/Energy	18
Health Effects/Non-Criteria Pollutants/Air	8
Health Effects/Pesticides	23
Health Effects/Toxic Substances	28
Health Effects/Transportation Sources/Air	9
Health Effects/Water Quality	32
INDUSTRIAL PROCESSES	
Industrial Processes/Air	9
Industrial Processes/Toxic Substances	28
Industrial Processes/Water Quality	33
MEASUREMENT AND MONITORING METHODS AND SYSTEMS	
Characterization and Measurement Methods Development/Air	7
Characterization and Measurement Methods Development/Toxic Substances	27
Characterization and Measurement Methods Development/Water Quality	30
Measurement Systems and Instrumentation Development/Energy	19
Monitoring Methods and Systems/Air	10
Monitoring Methods and Systems/Water Quality	34
QUALITY ASSURANCE	
Quality Assurance/Air	10
Quality Assurance/Drinking Water	13
Quality Assurance/Pesticides	24
Quality Assurance/Water Quality	35

FUNCTION INDEX (Continued)

Function	Page
TECHNICAL SUPPORT	
Technical Information/Interdisciplinary	22
Technical Support/Air	11
Technical Support/Toxic Substances	29
Technical Support/Water Quality	36
Urban Systems, Toxics, and Residuals Management/Water Quality	37
TRANSPORT AND FATE	
Transport and Fate/Air	11
Transport and Fate/Toxic Substances	29
Transport and Fate/Water Quality	36
Transport and Fate of Energy-Related Pollutants/Energy	20

OFFICE/LABORATORY INDEX

Code	Office/Laboratory Assignment	Page
ECAO/Cinc	**Environmental Criteria and Assessment Office/ Cincinnati, OH**	
	Carcinogen Assessment Group (CAG)/Environmental Criteria and Assessment Office (ECAO)/Interdisciplinary	21
ECAO/RTP	**Environmental Criteria and Assessment Office/ Research Triangle Park, NC**	
	Carcinogen Assessment Group (CAG)/Environmental Criteria and Assessment Office (ECAO)/Interdisciplinary	21
EMSL/Cinc	**Environmental Monitoring and Support Laboratory/Cincinnati, OH**	
	Drinking Water Treatment and Groundwater Protection/Drinking Water	12
	Measurement Systems and Instrumentation Development for Energy-Related Pollutants/Energy	19
	Monitoring Methods and Systems/Water Quality	34
	Quality Assurance/Drinking Water	13
	Quality Assurance/Water Quality	35
EMSL/LV	**Environmental Monitoring and Support Laboratory/Las Vegas, NV**	
	Environmental Assessments of Conventional and Advanced Energy Systems/Energy	15
	Monitoring Methods and Systems/Air	10
	Technical Support/Air	11
	Technical Support/Toxic Substances	29
	Technical Support/Water Quality	36

OFFICE/LABORATORY INDEX (Continued)

Code	Office/Laboratory Assignment	Page
EMSL/RTP	**Environmental Monitoring and Support Laboratory/Research Triangle Park, NC**	
	Health Effects/Non-Criteria Pollutants/Air	8
	Health Effects/Transportation Sources/Air	9
	Measurement Systems and Instrumentation Development for Energy-Related Pollutants/Energy	19
	Monitoring Methods and Systems/Air	10
	Quality Assurance/Air	10
	Technical Support/Air	11
	Technical Support/Toxic Substances	29
ERIC/Cinc	**Environmental Research Information Center/ Cincinnati, OH**	
	Technical Information/Interdisciplinary	22
ERL/Athens	**Environmental Research Laboratory/Athens, GA**	
	Characterization and Measurement Methods Development/Toxic Substances	27
	Characterization and Measurement Methods Development/Water Quality	30
	Drinking Water Treatment and Groundwater Protection/ Drinking Water	12
	Measurement Systems and Instrumentation Development for Energy-Related Pollutants/Energy	19
	Renewable Resources (Industrial)/Water Quality	35
	Transport and Fate/Toxic Substances	29
	Transport and Fate/Water Quality	36
	Transport and Fate of Energy-Related Pollutants/Energy	20

OFFICE/LABORATCRY INDEX (Continued)

Code	Office/Laboratory Assignment	Page
ERL/Corv	**Environmental Research Laboratory/ Corvallis, OR**	
	Ecological Effects/Pesticides	23
	Ecological Effects/Toxic Substances	27
	Ecological Processes and Effects/Air	7
	Effects of Energy-Related Pollutants on Organisms and Ecosystems/Energy	14
	Fuel Processing, Preparation, and Advanced Combustion/Energy	17
	Freshwater Ecological Effects/Water Quality	31
	Marine Ecological Effects/Water Quality	34
ERL/Duluth	**Environmental Research Laboratory/Duluth, MN**	
	Ecological Effects/Pesticides	23
	Ecological Effects/Toxic Substances	27
	Effects of Energy-Related Pollutants on Organisms and Ecosystems/Energy	14
	Fuel Processing, Preparation, and Advanced Combustion/Energy	17
	Freshwater Ecological Effects/Water Quality	31
	Great Lakes/Research and Development/Water Quality	31
	Health Effects/Water Quality	32
ERL/GB	**Environmental Research Laboratory/ Gulf Breeze, FL**	
	Ecological Effects/Toxic Substances	27
	Effects of Energy-Related Pollutants on Organisms and Ecosystems/Energy	14
	Freshwater Ecological Effects/Water Quality	31
ERL/Narr	**Environmental Research Laboratory/ Narragansett, RI**	
	Ecological Effects/Toxic Substances	27
	Effects of Energy-Related Pollutants on Organisms and Ecosystems/Energy	14
	Marine Ecological Effects/Water Quality	34

OFFICE/LABORATORY INDEX (Continued)

Code	Office/Laboratory Assignment	Page
ESRL/RTP	**Environmental Sciences Research Laboratory/ Research Triangle Park, NC**	
	Characterization and Measurement Methods Development/Air	7
	Characterization and Measurement Methods Development/ Toxic Substances	27
	Health Effects/Transportation Sources/Air	9
	Measurement Systems and Instrumentation Development for Energy-Related Pollutants/Energy	19
	Transport and Fate/Air	11
	Transport and Fate/Toxic Substances	29
HERL/Cinc	**Health Effects Research Laboratory/ Cincinnati, OH**	
	Effects of Energy-Related Pollutants on Organisms and Ecosystems/Energy	14
	Fuel Processing, Preparation, and Advanced Combustion/Energy	17
	Health Effects/Drinking Water	13
	Health Effects/Toxic Substances	28
	Health Effects/Transportation Sources/Air	9
	Health Effects/Water Quality	32
	Health Effects of Energy-Related Pollutants/Energy	18
HERL/RTP	**Health Effects Research Laboratory/Research Triangle Park, NC**	
	Effects of Energy-Related Pollutants on Organisms and Ecosystems/Energy	14
	Health and Ecological Effects/Radiation	25
	Health Effects/Criteria Pollutants/Air	8
	Health Effects/Non-Criteria Pollutants/Air	8
	Health Effects/Pesticides	23
	Health Effects/Toxic Substances	28
	Health Effects/Transportation Sources/Air	9
	Health Effects of Energy-Related Pollutants/Energy	18
	Quality Assurance/Pesticides	24
	Transport and Fate of Energy-Related Pollutants/Energy	20

OFFICE/LABORATORY INDEX (Continued)

Code	Office/Laboratory Assignment	Page
IERL/Cinc	**Industrial Environmental Research Laboratory/ Cincinnati, OH**	
	Control Technology/Solid Waste	26
	Environmental Assessments of Conventional and Advanced Energy Systems/Energy	15
	Fuel Extraction/Energy	17
	Fuel Processing, Preparation, and Advanced Combustion/Energy	17
	Industrial Processes/Air	9
	Industrial Processes/Water Quality	33
IERL/RTP	**Industrial Environmental Research Laboratory/ Research Triangle Park, NC**	
	Environmental Assessments of Conventional and Advanced Energy Systems/Energy	15
	Flue Gas Particulate Control/Energy	16
	Flue Gas Sulfur Oxide Control/Energy	16
	Fuel Processing, Preparation, and Advanced Combustion/Energy	17
	Industrial Processes/Air	9
	Industrial Processes/Water Quality	33
	Nitrogen Oxide Control/Energy	20
MERL/Cinc	**Municipal Environmental Research Laboratory/ Cincinnati, OH**	
	Characterization and Measurement Methods Development/Air	7
	Control Technology/Solid Waste	26
	Drinking Water Treatment and Groundwater Protection/ Drinking Water	12
	Environmental Assessments of Conventional and Advanced Energy Systems/Energy	15
	Urban Systems, Toxics, and Residuals Management/ Water Quality	37
	Wastewater Systems Control Technology (Wastewater Management)/Water Quality	37

OFFICE/LABORATORY INDEX (Continued)

Code	Office/Laboratory Assignment	Page
OALW/HQ	**Office of Air, Land, and Water Use/ EPA Headquarters, Washington, D.C.**	
	Wastewater Systems Control Technology (Wastewater Management)/Water Quality	37
OEMI/HQ	**Office of Energy, Minerals and Industry/Energy Coordination Staff/Headquarters, Washington, D.C.**	
	Effects of Energy-Related Pollutants on Organisms and Ecosystems/Energy	14
	Environmental Assessments of Conventional and Advanced Energy Systems/Energy	15
	Flue Gas Particulate Control/Energy	16
	Flue Gas Sulfur Oxide Control/Energy	16
	Fuel Extraction/Energy	17
	Fuel Processing, Preparation, and Advanced Combustion/Energy	17
	Health Effects of Energy-Related Pollutants/Energy	18
	Industrial Processes/Air	9
	Industrial Processes/Toxic Substances	28
	Industrial Processes/Water Quality	33
	Measurement Systems and Instrumentation Development for Energy-Related Pollutants/Energy	19
	Nitrogen Oxide Control/Energy	20
	Transport and Fate of Energy-Related Pollutants/Energy	20
OHEA/HQ	**Office of Health and Environmental Assessment/ EPA Headquarters, Washington, D.C.**	
	Carcinogen Assessment Group (CAG)/Environmental Criteria and Assessment Office (ECAO)/Interdisciplinary	21

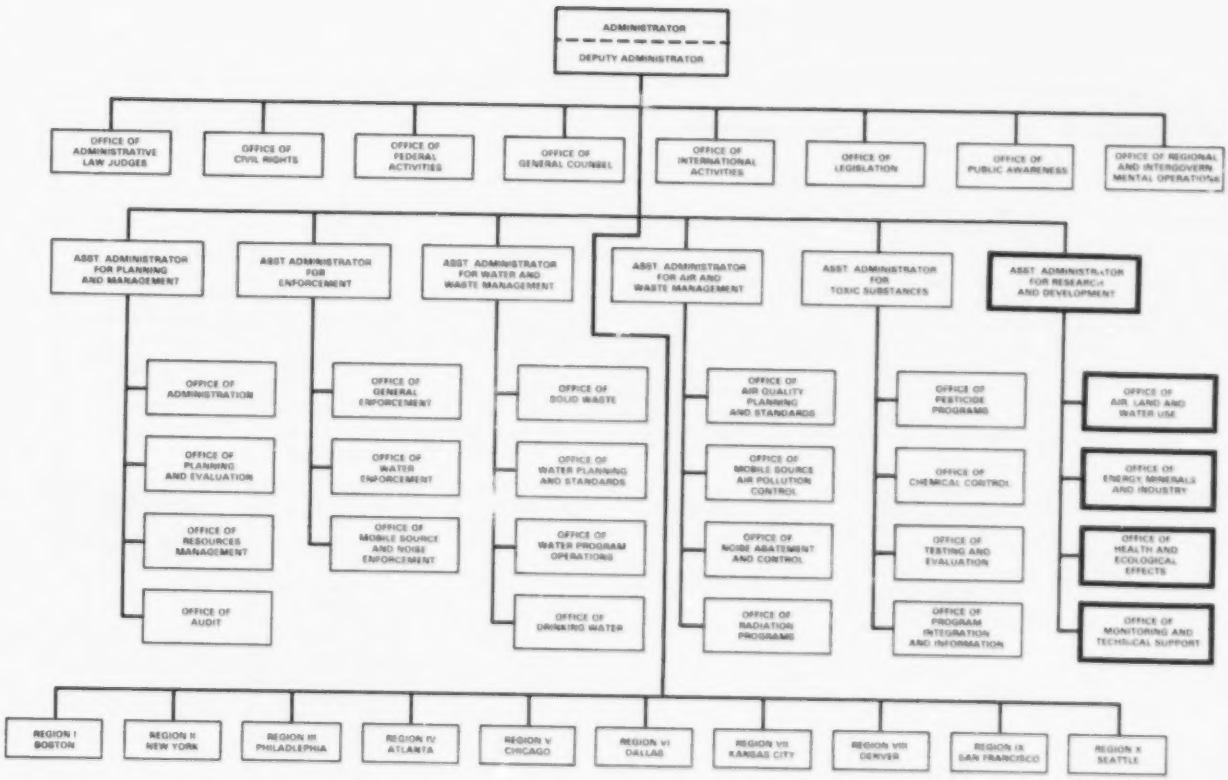
OFFICE/LABORATORY INDEX (Continued)

Code	Office/Laboratory Assignment	Page
OHEE/HQ	**Office of Health and Ecological Effects/EPA Headquarters, Washington, D.C.**	
	Chesapeake Bay/Water Quality	30
	Ecological Effects/Toxic Substances	27
	Freshwater Ecological Effects/Water Quality	31
	Health Effects/Non-Criteria Pollutants/Air	8
	Health Effects/Pesticides	23
	Health Effects/Toxic Substances	28
	Health Effects/Water Quality	32
	Integrated Pest Management (Industrial)/Pesticides	24
	Marine Ecological Effects/Water Quality	34
OMTS/HQ	**Office of Monitoring and Technical Support/ EPA Headquarters, Washington, D.C.**	
	Monitoring Methods and Systems/Air	10
	Monitoring Methods and Systems/Water Quality	34
	Technical Support/Toxic Substances	29
OPSA/HQ	**Office of Principal Science Advisor/ EPA Headquarters, Washington, D.C.**	
	Anticipatory Research and Development/Interdisciplinary	21
ORPM/HQ	**Office of Research Program Management/ EPA Headquarters, Washington, D.C.**	
	Technical Information/Interdisciplinary	22
RSKERL/Ada	**Robert S. Kerr Environmental Research Laboratory/Ada, OK**	
	Drinking Water Treatment and Groundwater Protection/ Drinking Water	12
	Industrial Processes/Water Quality	33
	Renewable Resources (Industrial)/Water Quality	35
	Transport and Fate/Toxic Substances	29
	Transport and Fate of Energy-Related Pollutants/Energy	20
	Urban Systems, Toxics and Residuals Management/ Water Quality	37

APPENDIX A ORGANIZATIONAL DIRECTORY

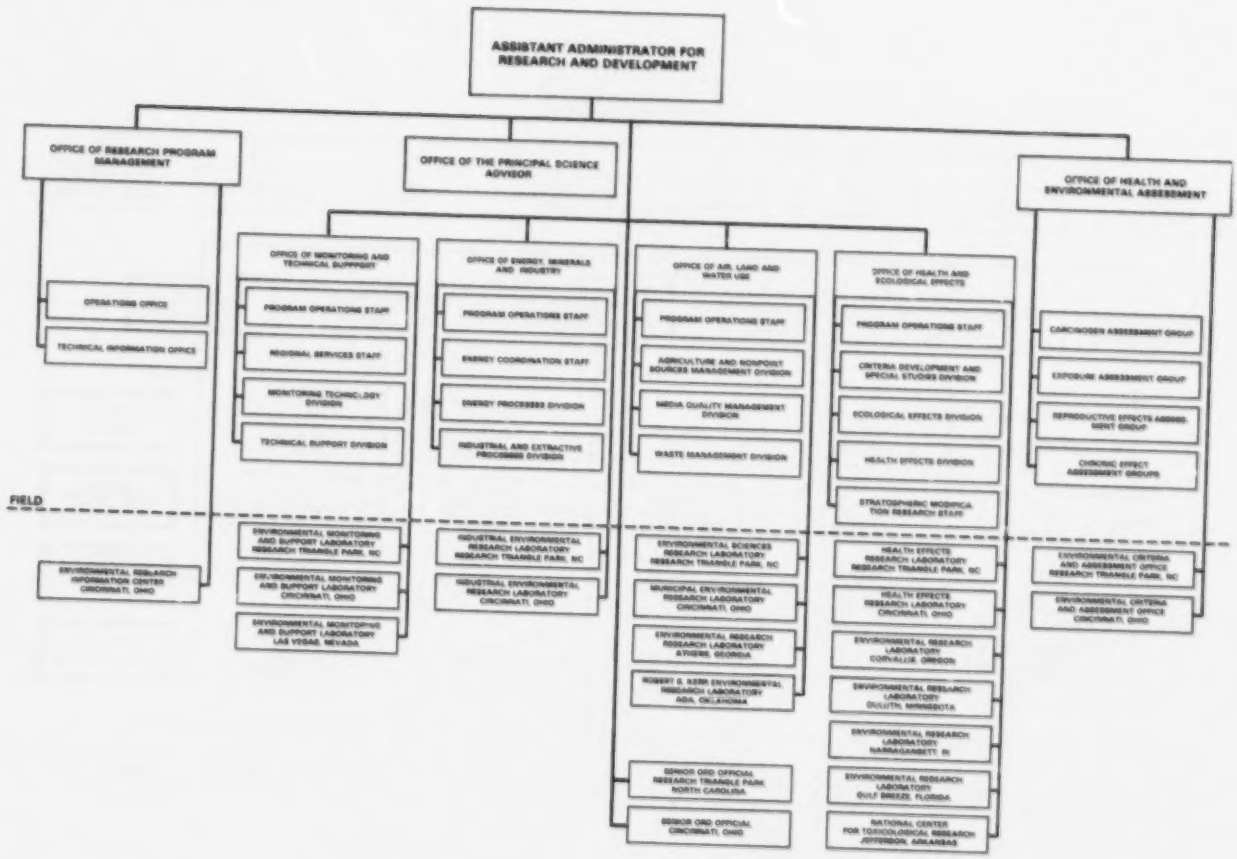
ORGANIZATION OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY

U.S. ENVIRONMENTAL PROTECTION AGENCY


ADMINISTRATOR
DEPUTY ADMINISTRATOR
OFFICE OF ADMINISTRATIVE LAW JUDGES
OFFICE OF CIVIL RIGHTS
OFFICE OF FEDERAL ACTIVITIES
OFFICE OF GENERAL COUNSEL
OFFICE OF INTERNATIONAL ACTIVITIES
OFFICE OF LEGISLATION
OFFICE OF PUBLIC AWARENESS
OFFICE OF REGIONAL AND INTERGOVERNMENTAL OPERATIONS
ASST. ADMINISTRATOR FOR PLANNING AND MANAGEMENT
ASST ADMINISTRATOR FOR ENFORCEMENT
ASST. ADMINISTRATOR FOR WATER AND WASTE MANAGEMENT
ASST. ADMINISTRATOR FOR AIR AND WASTE MANAGEMENT
ASST. ADMINISTRATOR FOR TOXIC SUBSTANCES
ASST. ADMINISTRATOR FOR RESEARCH AND DEVELOPMENT
OFFICE OF ADMINISTRATION
OFFICE OF PLANNING AND EVALUATION
OFFICE OF RESOURCES MANAGEMENT
OFFICE OF AUDIT
OFFICE OF GENERAL ENFORCEMENT
OFFICE OF WATER ENFORCEMENT
OFFICE OF MOBILE SOURCE AND NOISE ENFORCEMENT
OFFICE OF SOLID WASTE
OFFICE OF WATER PLANNING AND STANDARDS
OFFICE OF WATER PROGRAM OPERATIONS
OFFICE OF DRINKING WATER
OFFICE OF AIR QUALITY PLANNING AND STANDARDS
OFFICE OF MOBILE SOURCE AIR POLLUTION CONTROL
OFFICE OF NOISE ABATEMENT AND CONTROL
OFFICE OF RADIATION PROGRAMS
OFFICE OF PESTICIDE PROGRAMS
OFFICE OF CHEMICAL CONTROL
OFFICE OF TESTING AND EVALUATION
OFFICE OF PROGRAM INTEGRATION AND INFORMATION
OFFICE OF AIR, LAND AND WATER USE
OFFICE OF ENERGY, MINERALS AND INDUSTRY
OFFICE OF HEALTH AND ECOLOGICAL EFFECTS
OFFICE OF MONITORING AND TECHNICAL SUPPORT
REGION I BOSTON
REGION II NEW YORK
REGION III PHILADELPHIA
REGION IV ATLANTA
REGION V CHICAGO
REGION VI DALLAS
REGION VII KANSAS CITY
REGION VIII DENVER
REGION IX SAN FRANCISCO
REGION X SEATTLE

Preceding page blank

ORGANIZATION OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF RESEARCH AND DEVELOPMENT


ASSISTANT ADMINISTRATOR FOR RESEARCH AND DEVELOPMENT
OFFICE OF RESEARCH PROGRAM MANAGEMENT
OFFICE OF THE PRINCIPAL SCIENCE ADVISOR
OFFICE OF HEALTH AND ENVIRONMENTAL ASSESSMENT
OFFICE OF MONITORING AND TECHNICAL SUPPPORT
OFFICE OF ENERGY, MINERALS AND INDUSTRY
OFFICE OF AIR, LAND AND WATER USE
OFFICE OF HEALTH AND ECOLOGICAL EFFECTS
OPERATIONS OFFICE
TECHNICAL INFORMATION OFFICE
PROGRAM OPERATIONS STAFF
REGIONAL SERVICES STAFF
MONITORING TECHNOLOGY DIVISION
TECHNICAL SUPPORT DIVISION
PROGRAM OPERATIONS STAFF
ENERGY COORDINATION STAFF
ENERGY PROCESSES DIVISION
INDUSTRIAL AND EXTRACTIVE PROCESSES DIVISION
PROGRAM OPERATIONS STAFF
AGRICULTURE AND NONPOINT SOURCES MANAGEMENT DIVISION
MEDIA QUALITY MANAGEMENT DIVISION
WASTE MANAGEMENT DIVISION
PROGRAM OPERATIONS STAFF
CRITERIA DEVELOPMENT AND SPECIAL STUDIES DIVISION
ECOLOGICAL EFFECTS DIVISION
HEALTH EFFECTS DIVISION
STRATOSPHERIC MODIFICATION RESEARCH STAFF
CARCINOGEN ASSESSMENT GROUP
EXPOSURE ASSESSMENT GROUP
REPRODUCTIVE EFFECTS ASSESSMENT GROUP
CHRONIC EFFECT ASSESSMENT GROUPS
FIELD
ENVIRONMENTAL RESEARCH INFORMATION CENTER CINCINNATI, OHIO
ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY RESEARCH TRIANGLE PARK, NC
ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY CINCINNATI, OHIO
ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY LAS VEGAS, NEVADA
INDUSTRIAL ENVIRONMENTAL RESEARCH LABORATORY RESEARCH TRIANGLE PARK, NC
INDUSTRIAL ENVIRONMENTAL RESEARCH LABORATORY CINCINNATI, OHIO
ENVIRONMENTAL SCIENCES RESEARCH LABORATORY RESEARCH TRIANGLE PARK, NC
MUNICIPAL ENVIRONMENTAL RESEARCH LABORATORY CINCINNATI, OHIO
ENVIRONMENTAL RESEARCH RESEARCH LABORATORY ATHENS, GEORGIA
ROBERT S. KERR ENVIRONMENTAL RESEARCH LABORATORY ADA, OKLAHOMA
SENIOR ORD OFFICIAL RESEARCH TRIANGLE PARK, NORTH CAROLINA
SENIOR ORD OFFICIAL CINCINNATI, OHIO
HEALTH EFFECTS RESEARCH LABORATORY RESEARCH TRIANGLE PARK, NC
HEALTH EFFECTS RESEARCH LABORATORY CINCINNATI, OHIO
ENVIRONMENTAL RESEARCH LABORATORY CORVALLIS, OREGON
ENVIRONMENTAL RESEARCH LABORATORY DULUTH, MINNESOTA
ENVIRONMENTAL RESEARCH LABORATORY NARRAGANSETT, RI
ENVIRONMENTAL RESEARCH LABORATORY GULF BREEZE, FLORIDA
NATIONAL CENTER FOR TOXICOLOGICAL RESEARCH JEFFERSON, ARKANSAS
ENVIRONMENTAL CRITERIA AND ASSESSMENT OFFICE RESEARCH TRIANGLE PARK, NC
ENVIRONMENTAL CRITERIA AND ASSESSMENT OFFICE CINCINNATI, OHIO

OFFICE OF RESEARCH AND DEVELOPMENT
ORGANIZATIONAL DIRECTORY

The Office of Research and Development is responsible for the development, direction, and conduct of a national research, development, and demonstration program in pollution sources, fate, and health and welfare effects; waste management and utilization technology; environmental sciences; and monitoring systems. The Assistant Administrator for Research and Development also serves as principal science advisor to the Administrator and coordinator for the Agency's policies and programs concerning carcinogenesis and related problems.

	Headquarters* Mail Code	Telephone**
ASSISTANT ADMINISTRATOR FOR RESEARCH AND DEVELOPMENT		
STEPHEN J. GAGE Headquarters, Washington, D.C.	RD-672	(202) 755-2600
Associate Assistant Administrator Carl R. Gerber Headquarters, Washington, D.C.	RD-672	(202) 755-0122
Office of Health and Environmental Assessment **Director (Vacant)**		
Environmental Criteria and Assessment Office (Air) Director, Michael Berry (Acting) Research Triangle Park, NC 27711		CML (919) 541-2266 FTS 629-2266
Environmental Criteria and Assessment Office (Water) Director, Jerry Stara 26 West St. Clair Cincinnati, OH 45268		(513) 684-7406
Office of Research Program Management **Director, Samuel Rondberg** Headquarters, Washington, D.C.	RD-674	(202) 755-2606
Operations Office Deputy Director, Alan Neuschatz Headquarters, Washington, D.C.	RD-674	(202) 755-2590

OFFICE OF RESEARCH AND DEVELOPMENT
ORGANIZATIONAL DIRECTORY (CONTINUED)

	Headquarters* Mail Code	Telephone**
Office of Research Program Management (continued)		
Technical Information Office		
Deputy Director, W. Randall Shobe Headquarters, Washington, D.C.	RD-674	(202) 755-0468
Environmental Research Information Center		
Director, Robert E. Crowe 26 West St. Clair Cincinnati, OH 45268		(513) 684-7391
Office of the Principal Science Advisor		
Principal Physical Science Advisor, Herbert Wiser	RD-676	(202) 755-0477
Principal Engineering Advisor, William Lacy Headquarters, Washington, D.C.	RD-676	(202) 755-0464
Senior ORD Official, Cincinnati		
David G. Stephan		(513) 684-4402
Support Services Office, Cincinnati		
Director, Robert N. Carr 26 West St. Clair Cincinnati, OH 45268		(513) 684-7966
Senior ORD Official, Research Triangle Park		
John K. Burchard		CML (919) 541-2821 FTS 629-2821
Support Services Office, RTP		
Director, Paul A. Kenline Research Triangle Park, NC 27711		CML (919) 541-2613 FTS 629-2613

* * *

OFFICE OF RESEARCH AND DEVELOPMENT ORGANIZATIONAL DIRECTORY (CONTINUED)

OFFICE OF AIR, LAND, AND WATER USE

The Office of Air, Land, and Water Use is responsible for the development and demonstration of cost-effective methods for the prevention or management of pollutant discharge or waste disposal into the environment, except those related to energy, minerals, or industrial processes.

	Headquarters* Mail Code	Telephone**
Deputy Assistant Administrator **Thomas A. Murphy** Headquarters, Washington, D.C.	RD-682	(202) 426-0803
Associate Deputy Assistant Administrator Courtney Riordan Headquarters, Washington, D.C.	RD-682	(202) 426-0803
Program Operations Staff Director (Vacant) Headquarters, Washington, D.C.	RD-682	(202) 426-4255
Agriculture and Non-Point Source Management Division Director, Darwin R. Wright Headquarters, Washington, D.C.	RD-682	(202) 426-2407
Waste Management Division Director, William Rosenkranz Headquarters, Washington, D.C.	RD-682	(202) 426-2260
Media Quality Management Division Director (Vacant) Headquarters, Washington, D.C.	RD-682	(202) 426-1532
Environmental Sciences Research Laboratory Director, A. Paul Altshuller Deputy Director, Alfred Ellison Research Triangle Park, NC 27711		CML (919) 541-2111 FTS 629-2191 CML (919) 541-8411 FTS 629-2191
Regional Air Pollution Study Field Office 11640 Administration Drive St. Louis, MO 63141		CML (314) 425-7022 FTS 279-7022

OFFICE OF RESEARCH AND DEVELOPMENT ORGANIZATIONAL DIRECTORY (CONTINUED)

OFFICE OF AIR, LAND, AND WATER USE (CONTINUED)

	Headquarters* Mail Code	Telephone**
Municipal Environmental Research Laboratory		
Director, Francis T. Mayo		(513) 684-7951
Deputy Director, Louis W. Lefke		(513) 684-7953
26 West St. Clair		
Cincinnati, OH 45268		
Lebanon Pilot Plant		
Route 2, Box 7-A		CML (513) 932-4951
Glossar Road		FTS 684-2000
Lebanon, OH 45036		ask for (513) 932-4951
Robert S. Kerr Environmental Research Laboratory		
Director, William C. Galegar		CML (405) 332-8800
Deputy Director, Marvin L. Wood		FTS 743-2224
P.O. Box 1198		CML (405) 332-8800
Ada, OK 74820		FTS 743-2226
Environmental Research Laboratory		
Director, David D. Duttweiler		CML (404) 546-3134
Deputy Director, William Donaldson		FTS 250-3134
College Station Road		CML (404) 546-3430
Athens, GA 30601		FTS 250-3430

* * *

OFFICE OF ENERGY, MINERALS, AND INDUSTRY

The Office of Energy, Minerals, and Industry is responsible for the assessment and the development of methods for control of the environmental and socio-economic impacts of energy and mineral resource extraction, processing, conversion, and utilization systems and of other industrial operations.

	Headquarters* Mail Code	Telephone**
Deputy Assistant Administrator **Stephen R. Reznek (Acting)** Headquarters, Washington, D.C.	RD-681	(202) 755-4857
Associate Deputy Assistant Administrator Stephen R. Reznek Headquarters, Washington, D. C.	RD-681	(202) 755-4857
Program Operations Staff Director, Merrilee Merriman Headquarters, Washington, D.C.	RD-681	(202) 426-2507
Energy Coordination Staff Director, Clinton W. Hall Headquarters, Washington, D.C.	RD-681	(202) 426-4567
Energy Processes Division Director, Frank T. Princiotta Headquarters, Washington, D.C.	RD-681	(202) 755-0205
Industrial and Extractive Processes Division Director, Carl J. Schafer Headquarters, Washington, D.C.	RD-681	(202) 755-9014
Industrial Environmental Research Laboratory Director, John K. Burchard Deputy Director, Norbert Jaworski Research Triangle Park, NC 27711		CML (919) 541-2821 FTS 629-2821

OFFICE OF RESEARCH AND DEVELOPMENT ORGANIZATIONAL DIRECTORY (CONTINUED)

OFFICE OF ENERGY, MINERALS, AND INDUSTRY (CONTINUED)

	Headquarters* Mail Code	Telephone**
Industrial Environmental Research Laboratory Director, David G. Stephan Deputy Director, William A. Cawley 5555 Ridge Avenue Cincinnati, OH 45268		(513) 684-4402 (513) 684-4438
Oil and Hazardous Materials Spills Branch Edison, NJ 08817		CML (201) 321-6600 FTS 340-6600
Extraction Technology Branch P.O. Box 5555 Rivesville, WV 26588		CML (304) 278-5376 FTS 923-7496

* * *

OFFICE OF HEALTH AND ECOLOGICAL EFFECTS

The Office of Health and Ecological Effects is responsible for the development of health and ecological data needed for the establishment of standards and criteria or guidelines for those components of the environment in which specific pollutants or activities may require control.

	Headquarters* Mail Code	Telephone**
Deputy Assistant Administrator **Thomas A. Murphy (Acting)** Headquarters, Washington, D.C.	RD-683	(202) 426-2382
Associate Deputy Assistant Administrator William S. Murray (Acting) Headquarters, Washington, D.C.	RD-683	(202) 755-9210
Program Operations Staff Director, Thomas B. DeMoss Headquarters, Washington, D.C.	RD-683	(202) 755-9210
Stratospheric Modification Research Staff Director, Alphonse Forziati Headquarters, Washington, D.C.	RD-683	(202) 426-2317

OFFICE OF RESEARCH AND DEVELOPMENT ORGANIZATIONAL DIRECTORY (CONTINUED)

OFFICE OF HEALTH AND ECOLOGICAL EFFECTS (CONTINUED)

	Headquarters* Mail Code	Telephone**
Health Effects Division		
Director, George A. Armstrong, M.D.	RD-683	(202) 426-2275
Headquarters, Washington, D.C.		
Ecological Effects Division		
Director, David A. Flemer	RD-683	(202) 426-2317
Headquarters, Washington, D.C.		
Criteria Development and Special Studies Division		
Director, Roger S. Cortesi	RD-683	(202) 245-3025
Headquarters, Washington, D.C.		
Health Effects Research Laboratory		
Director, Gordon Hueter		CML (919) 549-2281
Deputy Director, Robert E. Lee, Jr.		FTS 629-2281
Research Triangle Park, NC 27711		
Wenatchee Research Station		CML (504) 663-0031
P.O. Box 73		FTS 446-0234
Wenatchee, WA 98801		
Health Effects Research Laboratory		
Director, John Garner		(513) 684-7401
Deputy Director, James Lucas, M.D.		(513) 684-7401
26 West St. Clair		
Cincinnati, OH 45268		
Recreational Water Quality Criteria Group		
South Ferry Road		CML (401) 789-1071
Narragansett, RI 02882		FTS 838-4843

OFFICE OF RESEARCH AND DEVELOPMENT
ORGANIZATIONAL DIRECTORY (CONTINUED)

OFFICE OF HEALTH AND ECOLOGICAL EFFECTS (CONTINUED)

	Headquarters* Mail Code	Telephone**
Environmental Research Laboratory Director James McCarty (Acting) Deputy Director (Vacant) 200 SW 35th Street Corvallis, OR 97330		CML (503) 757-4601 FTS 420-4601
Newport Field Station Marine Science Center Newport, OR 97365		CML (503) 867-4301 FTS 423-4111 ask for (503) 867-4031
Ely Field Station 222 West Conan Street Ely, MN 55731		CML (218) 365-5280 FTS 725-4242 ask for (218) 365-5280
Western Fish Toxicology Station 1350 SE Goodnight Avenue Corvallis, OR 97330		CML (503) 757-4765 FTS 420-4735
Arctic Environmental Research Station College, AK 99701		CML (907) 479-7728 FTS 399-0150 ask for (907) 479-7728
Environmental Research Laboratory Director, Donald I. Mount Deputy Director, David Yount 6201 Congdon Boulevard Duluth, MN 55804		CML (218) 727-6692 FTS 783-9550 CML (218) 727-6692 FTS 783-9549
Newtown Fish Toxicology Station 3411 Church Street Cincinnati, OH 45244		(513) 684-8601
Monticello Field Station Box 500 Monticello, MN 55362		CML (513) 295-5145

OFFICE OF RESEARCH AND DEVELOPMENT
ORGANIZATIONAL DIRECTORY (CONTINUED)

OFFICE OF HEALTH AND ECOLOGICAL EFFECTS (CONTINUED)

	Headquarters* Mail Code	Telephone**
Large Lakes Research Station 9311 Groh Road Grosse Ile, MI 48138		CML (313) 675-5000 FTS 226-7811
Environmental Research Laboratory Director, Eric D. Schneider Deputy Director, Frank G. Lowman South Ferry Road Narragansett, RI 02882		CML (401) 789-1071 FTS 838-4843
Environmental Research Laboratory Director, Thomas Duke Deputy Director, Tudor Davies Sabine Island Gulf Breeze, FL 32561		CML (904) 932-5311 FTS 686-9011
Bears Bluff Field Station Box 368 Johns Island, SC 29455		CML (803) 599-0371 FTS 577-4171, ask for (803) 599-0371

* * *

OFFICE OF MONITORING AND TECHNICAL SUPPORT

The Office of Monitoring and Technical Support is responsible for the development and demonstration of monitoring systems; quality control of pollutant measurement and monitoring techniques (quality assurance); technical information dissemination; and technical support services.

	Headquarters* Mail Code	Telephone**
Deputy Assistant Administrator **Albert C. Trakowsi, Jr.** Headquarters, Washington, D.C.	RD-680	(202) 426-2202
Associate Deputy Assistant Administrator H. Matthew Bills Headquarters, Washington, D.C.	RD-680	(202) 426-4453
Program Operations Staff Director, Ross R. Robeson Headquarters, Washington, D.C.	RD-680	(202) 755-6403
National Workforce Development Staff Director, Donald Cook Headquarters, Washington, D.C.	RD-680	(202) 755-2937
Monitoring Technology Division Director, Charles Brunot Headquarters, Washington, D.C.	RD-680	(202) 426-2026
Technical Support Division Director, C.E. James (Acting) Headquarters, Washington, D.C.	RD-680	(202) 426-2382
Environmental Monitoring and Support Laboratory Director, Thomas Hauser Deputy Director, Franz Burmann Research Triangle Park, NC 27711		CML (919) 541-2111 FTS 629-2106

OFFICE OF RESEARCH AND DEVELOPMENT
ORGANIZATIONAL DIRECTORY (CONTINUED)

OFFICE OF MONITORING AND TECHNICAL SUPPORT (CONTINUED)

	Headquarters* Mail Code	Telephone**
Environmental Monitoring and Support Laboratory		
Director, Dwight G. Ballinger		(513) 684-7301
Deputy Director, Robert L. Booth		(513) 684-7301
26 West St. Clair		
Cincinnati, OH 45268		
Environmental Monitoring and Support Laboratory		
Director, George B. Morgan		CML (702) 736-2969
Deputy Director, Richard S. Hauley		FTS 595-2969
P.O. Box 15027		
Las Vegas, NV 89114		
Vint Hill Field Station		CML (703) 347-6224
P.O. Box 1587, Building 166		FTS 557-3110
Warrenton, VA 22186		

* * *

REGIONAL SERVICES STAFF

Because of the importance of planning and coordinating research and development activities with the requirements of EPA's regional needs, the Office of Research and Development has created the Regional Services Staff. This staff is responsible for planning, coordinating, and reviewing a comprehensive program to provide intercommunication and assistance on all matters of mutual interest and/or responsibility of the Agency's Regional Offices and the Office of Research and Development.

OFFICE OF RESEARCH AND DEVELOPMENT ORGANIZATIONAL DIRECTORY (CONTINUED)

REGIONAL SERVICES STAFF (CONTINUED)

	Headquarters* Mail Code	Telephone**
Headquarters Office		
Director, Michael L. Mastracci Staff Asst., Frances M. Duttkin Regional Services Staff Headquarters, Washington, D.C.	RD-674	(202) 755-0820
Regional Liaison Officers		
Regions I, II, and V Joseph F. Roesler Ernest G. Karvelis Regional Services Staff Environmental Protection Agency 26 West St. Clair Street Cincinnati, OH 45268		(513) 684-7285
Regions VI, VIII, IX, and X Richard E. Jaquish Phillips Arberg Regional Services Staff Environmental Protection Agency P.O. Box 15027 Las Vegas, NV 89114		(702) 736-2969
Regions III, IV, and VII Rudolph Boksleitner Gordon C. Ortman Regional Services Staff (MD-5) Environmental Protection Agency Research Triangle Park, NC 27711		(919) 541-2611

*The mailing address for the Office of Research and Development Headquarters is: Environmental Protection Agency, 401 M Street, SW Washington, D.C. 20460. Headquarters mail should also include the Mail Code.

**Telephone numbers are both commercial (CML) and Federal Telecommunications System (FTS) unless otherwise indicated.

EPA OFFICIALS AND REGIONAL CONTACTS

	Telephone*	States Served
Administrator **Douglas Costle** Environmental Protection Agency A – 100 Washington, DC 20460	(202) 755-2700	
Deputy Administrator **Barbara Blum** Environmental Protection Agency A – 100 Washington, DC 20460	(202) 755-2711	
Office of Regional and Intergovernmental Operations **J. Edward Roush** Environmental Protection Agency A – 101 Washington, DC 20460	(202) 755-0444	
Region I Environmental Protection Agency Room 2203 John F. Kennedy Federal Building Boston, Massachusetts 02203		Connecticut Maine Massachusetts New Hampshire Rhode Island Vermont
Regional Administrator William R. Adams, Jr.	(617) 223-7210	
Deputy Regional Administrator Rebecca W. Hanmer	(617) 223-7210	
Public Affairs Director Paul G. Keough	(617) 223-4704	
R&D Contact Richard Keppler	(617) 223-3477	

EPA OFFICIALS AND REGIONAL CONTACTS (CONTINUED)

	Telephone*	States Served
Region II		
Environmental Protection Agency Room 1009 26 Federal Plaza New York, New York 10007		Delaware New Jersey New York Puerto Rico
Regional Administrator Eckardt C. Beck	(212) 264-2525	
Deputy Regional Administrator Richard T. Dewling	(212) 264-0396	
Public Affairs Director James Marshall	(212) 264-2515	
R&D Contact Robert W. Mason	(212) 340-6782	
Region III		
Environmental Protection Agency Curtis Building 6th & Walnut Streets Philadelphia, Pennsylvania 19106		District of Columbia Maryland Pennsylvania West Virginia Virginia
Regional Administrator Jack J. Schramm	(215) 597-9814	
Deputy Regional Administrator Alvin R. Morris	(215) 597-9812	
Office of Congressional Affairs Larry Teller	(215) 597-9816	
R&D Contact Albert Montague	(215) 597-9856	

EPA OFFICIALS AND REGIONAL CONTACTS (CONTINUED)

	Telephone*	States Served
Region IV		
Environmental Protection Agency 345 Courtland Street, N.E. Atlanta, Georgia 30308		Alabama Florida Georgia Kentucky Mississippi South Carolina Tennessee
Regional Administrator John C. White	(404) 881-4727 CML 257-4727 FTS	
Deputy Regional Administrator John A. Little	(404) 881-4727 CML 257-4727 FTS	
Public Affairs Director Charles D. Pou	(404) 881-3004 CML 257-3004 FTS	
R&D Contact Edmond Lomasney	(404) 881-5458 CML 257-3012 FTS	
Region V		
Environmental Protection Agency 230 S. Dearborn Chicago, Illinois 60604		Illinois Indiana Michigan Minnesota Ohio Wisconsin
Regional Administrator John McGuire	(312) 353-2000	
Deputy Regional Administrator Valdas V. Adamkus	(312) 353-2000	
Public Affairs Director Frank M. Corrado	(312) 353-2072	
R&D Contact Clifford Risley, Jr.	(312) 353-2314	

EPA OFFICIALS AND REGIONAL CONTACTS (CONTINUED)

	Telephone*	States Served
Region VI		
Environmental Protection Agency 1201 Elm Street First International Building Dallas, Texas 75270		Arkansas Louisiana New Mexico Oklahoma Texas
Regional Administrator Adlene Harrison	(214) 729-2600	
Deputy Regional Administrator Earl N. Kari	(214) 729-2600	
Public Affairs Director Ed Grisham	(214) 729-2600	
R&D Contact Mildred Smith	(214) 729-2697	
Region VII		
Environmental Protection Agency 1735 Baltimore Avenue Kansas City, Missouri 64108		Iowa Kansas Missouri Nebraska
Regional Administrator Kathleen Camin	(816) 374-5493 CML 758-5493 FTS	
Deputy Regional Administrator David Alexander	(816) 374-5495 CML 758-5495 FTS	
Office of External Affairs Donald D. Christenson	(816) 374-3582 CML 758-3582 FTS	
R&D Contact Robert Markey	(816) 374-2921 CML 758-2921 FTS	

EPA OFFICIALS AND REGIONAL CONTACTS (CONTINUED)

	Telephone*	States Served
Region VIII		
Environmental Protection Agency Suite 900 1860 Lincoln Street Denver, Colorado 80203		Colorado Montana North Dakota South Dakota Utah Wyoming
Regional Administrator Alan Merson	(303) 837-3895 CML 327-3895 FTS	
Deputy Regional Administrator Roger L. Williams	(303) 837-3895 CML 327-3895 FTS	
Public Affairs Director Richard Lathrop	(303) 837-4904 CML 327-4904 FTS	
R&D Contact Dennis Nelson	(303) 837-2226 CML 327-2226 FTS	
Region IX		
Environmental Protection Agency 215 Fremont Street San Francisco, California 94105		Arizona California Hawaii Nevada
Regional Administrator Paul DeFalco, Jr.	(415) 556-2320	
Deputy Regional Administrator Sheila Prendiville	(415) 556-2320	
Chief, Office of External Relations David L. Calkins	(415) 556-6266	
R&D Contact (Vacant)	(415) 556-6266	

EPA OFFICIALS AND REGIONAL CONTACTS (CONTINUED)

	Telephone*	States Served
Region X		
Environmental Protection Agency 1200 6th Avenue Seattle, Washington 98101		Alaska Idaho Washington Oregon
Regional Administrator Donald P. DuBois	(206) 442-1220 CML 399-5810 FTS	
Deputy Regional Administrator L. Edwin Coate	(206) 442-1220 CML 399-5810 FTS	
Office of Public Awareness Donald Bliss	(206) 442-1203 CML 399-1203 FTS	
R&D Contact John Osborn	(206) 442-1296 CML 399-1296 FTS	

*Telephone numbers are both commercial and FTS unless otherwise indicated.

APPENDIX B GRANT/COOPERATIVE AGREEMENT AND CONTRACT GUIDELINES

Grant/Cooperative Agreements and Contract Activities*/

While some of the research funded for fiscal year 1979 will be done in-house by ORD's staff, much of the research will be accomplished by grant/cooperative agreement or contract. To explain how each of these is used, a brief discussion follows.

Contracts—A contract is used (1) whenever the principal purpose of the instrument is the acquisition, by purchase, lease, or barter, of property or services for the direct benefit or use of the Federal Government; or (2) whenever an executive agency determines in a specific instance that the use of a type of procurement contract is appropriate.

Grant Agreements—A grant is to be used when (1) the principal purpose of the relationship is **the transfer** of money, property, services, or anything of value to the State or local government or other recipient in order to accomplish a public purpose of support or stimulation authorized by Federal statute, **rather than** acquisition, by purchase, lease, or barter, of property or services for the direct benefit or use of the Federal Government; and (2) **no substantial involvement** is anticipated between the executive agency, acting for the Federal Government, and the State or local government or other recipient during performance of the contemplated activity.

Cooperative Agreements—A cooperative agreement is used in lieu of a grant when (1) the principal purpose of the relationship is the transfer of money, property, services, or anything of value to the State or local government or other recipient to accomplish a public purpose of support or stimulation authorized by Federal statute, rather than acquisition, by purchase, lease, or barter, of property or services for the direct benefit or use of the Federal Government; and (2) **substantial involvement is anticipated between the executive agency**, acting for the Federal Government, and the State or local government or other recipient during performance of the contemplated activity.

The Laboratory Directors decide how the goals of a specific research project can best be achieved, and document this project level planning. This documentation describes each project or task required to accomplish the research objective, indicates how the task will be implemented (i.e., grant, contract, in-house), and estimates the amount of dollars required to complete the task.

All planned contracting is carried out competitively with notices of the availability of Request for Proposal (RFP) documents publicly advertised. Unsolicited contract proposals should *not* be submitted for such projects. The review/selection procedures followed may vary slightly from project to project, but all pertinent information regarding both the project objectives and criteria for evaluation of proposals will be included in each RFP package. The Laboratory Director should not be contacted for information on contracts that have been advertised since such communication may conflict with Federal Procurement Regulations and could serve to disqualify a prospective contractor from further consideration.

Preceding page blank

With regard to all grant and cooperative agreement projects, contact with the cognizant Laboratory Director is encouraged. The Laboratory Director will generally be the individual responsible for making the award/reject recommendation on individual proposals. The following pages provide more detailed information for submission of grant applications or contract proposals.

*/Note: Information on other EPA grant programs is presented in the publication "Grant Assistance Programs of the Environmental Protection Agency," available from EPA's Grants Administration Division (PM-216), Washington, DC 20460. Information on contracting procedures and policies is presented in the booklet, "Selling to EPA," available from EPA's Contracts Management Division (PM-214), Washington, DC 20460.

Guidelines For Submission of Grant and Cooperative Agreement Applications or Contract Proposals

A. Solicited contract proposals–

Requests for Proposals (RFP's) for all planned contracts will be advertised in the Commerce Business Daily issued by the U.S. Department of Commerce. A subscription to this publication may be obtained from the Superintendent of Documents, Government Printing Office, Washington, DC 20402. These advertisements will provide instructions for obtaining RFP packages from EPA's Contracts Management Division. Each RFP package will include detailed information describing the form and context of proposals to be submitted as well as the required time and place of submission.

EPA's Contracts Management Division publishes "Selling to EPA" to assist the business community in its efforts to find new markets in the Environmental Protection Agency. This publication includes the names and addresses of contracting offices in EPA and the Office of Research and Development laboratories, the types of products and services procured, general information about the Agency, and hints to aid businessmen in selling to EPA.

B. Unsolicited contract proposals–

While most of ORD's contract research and demonstration is conducted through the use of RFP's to solicit proposals (item A above), contracts can also be awarded on the basis of unsolicited proposals which meet the sole-source requirements of the Federal Procurement Regulations. Unsolicited contract proposals should be addressed to the Grants Administration Division (PM-216), Environmental Protection Agency, Washington, DC 20460. While no specific format is required, such proposals should generally contain:

1. Name, address and telephone number of the organization or individual submitting the proposal.
2. Date of preparation or submission.
3. Type of organization (profit, non-profit, educational, individual, other).
4. Concise title.
5. Project objective.
6. Need, utility and significance of project.
7. Scope of work, i.e., an outline and discussion of the purpose of proposed effort of activity, the method of attacking the problem, and nature and extent of anticipated results.
8. Experimental data developed by feasibility studies previously completed.
9. Estimated duration of the project, proposed starting and completion dates.
10. Scientific or technical references.

11. Names of key personnel to be involved, brief biographical information, including principal publications and relevant experience.
12. Equipment, facilities and personnel requirements.
13. Proposed budget, including separate cost estimates for salaries and wages, equipment, expendable supplies, services, travel, subcontracts, other direct costs and overhead.

EPA's Appropriation Act specifically provides that cost sharing must be included in contracts resulting from proposals for projects not specifically solicited. The extent of the cost sharing by the recipient will be decided after the proposal has been reviewed and determined to be of mutual interest to the grantee or contractor and the government.

The material submitted should contain both a technical and a business proposal. The technical proposal should clearly define the unique concept involved (as required for sole-source procurements) and include a plan for turning the concept into reality. It is suggested that the technical proposal identify any proprietary aspects of the proposed ideas or process. The business proposal should include a detailed cost proposal, information concerning past Government contracts, and any special terms and conditions desired.

C. Grant or Cooperative Agreement Applications—

Pre-application activity—

Although grant or cooperative agreement applications may be submitted at any time and on any subject, applicants should take the following actions prior to submission of a formal grant application in order to save time and effort both for the applicant and EPA.

1. Review ORD's current research program, as described in Part I, to determine if funds are available in the specific area of interest; and
2. Contact the appropriate research and development personnel cited in this document to ascertain if a grant project is planned prior to submission of an official grant application.

Submission of a preproposal is also strongly encouraged. The preproposal should be sent directly to the cognizant Laboratory Director for review. (See ORD Organizational Directory, p. 57.) A preproposal should normally consist of a three or four-page narrative outlining the project concept and containing the following information:

1. **Objective**—a clear statement of the specific objective is necessary. If the objective is designed to fulfill a specific project (as identified in Step 1 above), the project should be identified. If the objective cannot be associated with any specific project, some statement of the presumed value to EPA of attaining the research objective should be made.
2. **Project Plan**—a brief description of the research/development/demonstration concept and the plan for execution of the proposed project, including a projected time-schedule for accomplishments of intermediate outputs or key occurrences indicating progress (milestones) and the final objective.

3. **Budget**—a preliminary estimate of total cost which will be incurred in order to complete the project. Also, the share of the costs which will be provided by the applicant should be indicated.
4. **Staff and Facilities**—a brief listing of key project staff and capabilities and a brief description of any special facilities or other factors which would contribute to the success of the project. A single person who will have the responsibility for planning, coordinating, and supervising the project should be identified along with the fraction of his time to be devoted to the project.

Following review and evaluation of the preproposal by the cognizant Laboratory Director, the prospective applicant will be advised whether (a) an application should be submitted for formal review, (b) submission of a modified preproposal is suggested, (c) possible submission of the preproposal to another Agency, Department, or source of funds is suggested, or (d) further pursuit of the particular topic is discouraged.

Formal applications—

All formal grant applications and cooperative agreement applications are to be submitted to the Grants Administration Division, Environmental Protection Agency, Washington, DC 20460. After formal "logging in" and acknowledgement, those applications falling within the Office of Research and Development's purview are referred to the appropriate ORD program office for program relevance review by the cognizant Laboratory Director. This review quickly screens out those applications for which EPA has no authority or interest or those for which no funds are available. For those proposals in which ORD has an interest, scientific/technical merit reviews are then conducted by *both* in-house and extramural experts. Extramural reviews are obtained in the National Science Foundation fashion—individual written reviews submitted by mail. Comments are also obtained from the Regional Office in the Region where the applicant is located and where the project would be conducted to determine the relationship of the proposed project to Regional programs and policies.

The individual coordinating the scientific/technical merit review (normally the cognizant Laboratory Director) assembles and evaluates both intramural and extramural review comments and prepares a recommendation for action on each application. The recommendation may be to award a grant, to reject the application, or to attempt to negotiate with the applicant to modify the scope of work. In those cases where the proposed scope of work could be modified in order to relate more directly to EPA's objectives and thereby qualify for funding, direct contact is made with the applicant to determine whether or not acceptable adjustments in the scope of work can be made.

CATALOG OF FEDERAL DOMESTIC ASSISTANCE/ORD PROGRAM GUIDE CROSS-REFERENCE

The *Catalog of Federal Domestic Assistance* (CFDA) is another publication which provides information for Federal research grants, cooperative agreement, or contract applicants. The CFDA lists several research programs that are administered by the Office of Research and Development. Supplemental information concerning the extramural activities described in this guide may be found in the CFDA. The correlation between ORD's research activities and the programs listed in the CFDA is shown in the following index.

CFDA Number	CFDA Title	Program Guide Title	Page
66.500	Environmental Protection—Consolidated Research Grants	Energy Interdisciplinary	14 21
66.501	Air Pollution Control Research Grants	Air	7
66.502	Pesticides Control Research Grants	Pesticides	23
66.504	Solid Waste Disposal Research Grants	Solid Waste	26
66.505	Water Pollution Control Research, Development, and Demonstration Grants	Water Quality	30
66.506	Safe Drinking Water Research and Demonstration Grants	Drinking Water	12
66.507	Toxic Substances Research Grants	Toxic Substances	27

Credits: Marie S Murray, Susan Rauth, Anthony Lee
Joseph Gearo, Linda K. Smith

☆U.S. GOVERNMENT PRINTING OFFICE: 1979—281-147:4

MAILING LIST FORM

For your convenience, this form is a self-mailer. Complete the required information, FOLD in half, STAPLE, add a STAMP, and MAIL to the address printed on the reverse side, if you wish your name to be added to the FY-80 Program Guide mailing list.

Individual Contact and Title

Name of Organization

Street Address

City State Zip

You must return this form to receive next year's Program Guide.

PLACE
STAMP
HERE

PROGRAM GUIDE FY 79

Technical Information Office (RD-674)
Office of Research and Development
Environmental Protection Agency
401 M Street, SW
Washington, DC 20460